Preface

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Version 1.0A

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Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment onto an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Shielded interconnect cables and a shielded AC power cable must be employed with this equipment to ensure compliance with the pertinent RF emission limits governing this device. Changes or modifications not expressly approved by the system's manufacturer could void the user's authority to operate the equipment.

Declaration of Conformity

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation

Canadian Department of Communications

This class B digital apparatus meets all requirements of the Canadian Interference-causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Réglement sur le matériel brouilieur du Canada.

About the Manual

The manual consists of the following:

Chapter 1
Introducing the Motherboard

Describes features of the motherboard.

Go to ⇨ page 1

Chapter 2
Installing the Motherboard

Describes installation of motherboard components.

Go to ⇨ page 7

Chapter 3
Using BIOS

Provides information on using the BIOS Setup Utility.

Go to ⇨ page 27

Chapter 4
Using the Motherboard Software

Describes the motherboard software.

Go to ⇨ page 47

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Setting Up eJIFFY

Describes the eJIFFY setting up

Go to ⇨ page 51

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Trouble Shooting

Provides basic trouble shooting tips

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Chapter 1
Introducing the Motherboard

Introduction

Thank you for choosing the H55H-M2 motherboard. This motherboard is a high performance, enhanced function motherboard designed to support the LGA1156 socket for latest Intel® Core™ i7/Core™ i5/Core™ i3 processors for high-end business or personal desktop markets.

This motherboard is based on Intel® H55 Express Chipset for best desktop platform solution. H55 is a single-chip, highly integrated, high performance Hyper-Threading peripheral controller, unmatched by any other single chip-device controller. This motherboard supports up to 16 GB of system memory with dual channel DDR3 1333/1066 MHz. Two PCI slots are supported, fully compliant with PCI rev 2.3 specification at 33MHz. High resolution graphics via one PCI Express slot, intended for Graphics Interface, is fully compliant to the PCI Express Base Specification revision 2.0. Additionally, one PCI Express x4 slot is supported, fully compliant to the PCI Express Base Specificaiton revision 2.0 as well. It implements an EHCI compliant interface that provides twelve USB 2.0 ports (six USB ports and three USB 2.0 headers support additional six USB ports).

The motherboard is equipped with advanced full set of I/O ports in the rear panel, including one PS/2 mouse and keyboard combo connector, one DVI port, one VGA port, six USB ports, one ESATA port, two LAN ports, one SPDIF output port and audio jacks for microphone, line-in and 8-ch line-out.

Feature

Processor

The motherboard uses an LGA1156 type of Intel® Core™ i7/Core™ i5/Core™ i3 processors that carries the following features:

- Intel® Core™ i7/Core™ i5/Core™ i3 and Pentium® processor series
- DMI 2.5 GT/S
- Supports “Hyper-Threading” technology CPU

“Hyper-Threading” technology enables the operating system into thinking it’s hooked up to two processors, allowing two threads to be run in parallel, both on separate “logical” processors within the same physical processor.

This board supports CPU up to 95W TDP.

Chipset

The Intel H55 Express Chipset is a single-chip with proven reliability and performance.

- One x16 PCI Express Gen2 ports each supporting up to 8 GB/s direction peak bandwidth
- An additional x4 PCI Express Gen2 port configuration to 2 x2 interface
- Compliant with PCI Rev 2.3 interface at 33 MHz
- Integrated SATA 3.0 Gb/s Host Controller
- Twelve USB 2.0 ports supported
- Serial Peripheral Interface (SPI) support
- Enhanced DMA Controller, interrupt controller, and timer functions
- Integrated Graphics Support with PAVP 1.5

Memory

- Supports DDR3 1333/1066 DDR3 SDRAM with Dual-channel architecture
- Accommodates four unbuffered DIMMs
- 4 x 240-pin DDR3 DIMM sockets support up to 16 GB

Onboard LAN

- Supports PCI Express™ 1.1
- Integrated 10/100/1000 transceiver
- Wake-on-LAN and remote wake-up support

Audio

This motherboard may support either of the following Audio chipsets:

- 7.1+2 Channel High Definition Audio Codec
- Meets Microsoft WLP3.x (Windows Logo Program) audio requirements
- All DACs supports 44.1k/48k/96k/192kHz sample rate
- Analog differential CD input
- Software selectable 2.5V/3.2V/4.0V VREFOUT
- Direct Sound 3D compatible
- Power Support: Digital: 3.3V; Analog: 5.0V

Expansion Options

The motherboard comes with the following expansion options:

- One PCI Express x16 slot for Graphic Interface
- One PCI Express x4 slot
- Two 32-bit PCI v2.3 compliant slots
- Five 7-pin SATA connectors

Integrated I/O

The motherboard has a full set of I/O ports and connectors:

- One combo port for mouse and keyboard
- One SPDIF output port
- One DVI port
- One VGA port
- Six USB ports
- Two LAN ports
- One ESATA port
- Audio jacks for microphone, line-in and 8-ch line-out

BIOS Firmware

This motherboard uses AMI BIOS that enables users to configure many system features including the following:

- Power management
- Wake-up alarms
- CPU parameters
- CPU and memory timing

The firmware can also be used to set parameters for different processor clock speeds.

1.Some hardware specifications and software items are subject to change without prior notice.

2.Due to chipset limitation, we recommend that motherboard be operated in the ambiance between 0 and 50°C.

Specifications

CPU	•	LGA1156 socket for latest Intel® Core™ i7/Core™ i5/Core™ i3 processors
	•	Supports “Hyper-Threading” technology CPU
	•	DMI 2.5 GT/S
Chipset	•	Intel H55 Express Chipset
Memory	•	Dual-channel DDR3 memory architecture
	•	4 x 240-pin DDR3 DIMM sockets support up to 16 GB
	•	Supports DDR3 1333/1066 DDR3 SDRAM
Expansion Slots	•	1 x PCI Express Gen2 x16 slot
	•	1 x PCI Express x4 slot
	•	2 x PCI slots
Storage	•	Supported by Intel H55 Express Chipset
	•	5 x Serial ATA 3.0 Gb/s Host Controllers
Audio	•	ALC892 8-CH High definition audio CODEC
LAN	•	Realtek RTL8111DL 10/100/1000 Fast Ethernet Controller
Rear Panel I/O	•	1 x PS/2 keyboard & PS/2 mouse combo connector
	•	1 x SPDIF out port
	•	1 x VGA port
	•	1 x DVI port
	•	6 x USB ports
	•	1 x ESATA port
	•	2 x RJ45 LAN connectors
	•	1 x Audio port (Line in, microphone in and 8-ch line out)
Internal I/O Connectors & Headers	•	1 x 24-pin ATX Power Supply connector & ATX4P connector
	•	5 x Serial ATA connectors
	•	3 x USB 2.0 headers support additional 6 USB ports
	•	1 x Clear CMOS button
	•	2 x serial headers
	•	1 x parallel header
	•	1 x PWR button
	•	1 x RST button
	•	1 x TPM header
	•	1 x Chassis Detect header
	•	1 x Front panel header
	•	1 x SPDIF out header
	•	1 x Front panel audio header
	•	CPU_FAN/SYS_FAN/PWR_FAN connectors
System BIOS	•	AMI BIOS with 16Mb SPI ROM
	•	Supports Plug and Play, STR/STD, Hardware moniter, DMI
	•	F11 hot key for boot up devices option
	•	CPU voltage adjustable
	•	Memory voltage adjustable
	•	Support PgUp clear CMOS hotkey
Form Factor	•	Micro ATX Size, 244mm x 244 mm

Motherboard Components

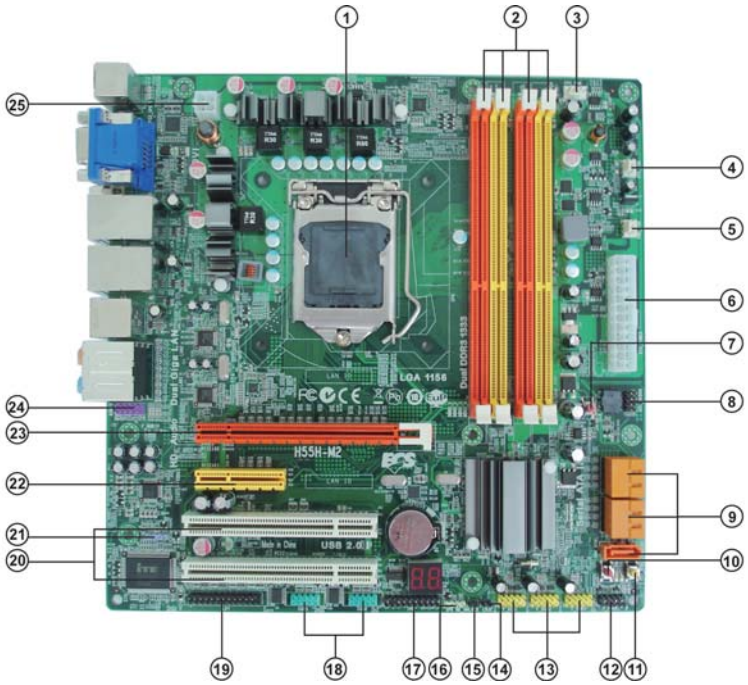


Table of Motherboard Components

LABEL	COMPONENTS
1. CPU Socket	LGA1156 socket for Intel® Core™ i7/Core™ i5/ Core™ i3 processors
2. DDR3_1~4	240-pin DDR3 SDRAM slots
3. CPU_FAN	CPU cooling fan connector
4. SYS_FAN	System cooling fan connector
5. PWR_FAN	Power cooling fan connector
6. ATX_POWER	Standard 24-pin ATX power connector
7. CLR_CMOS_BTN	Clear CMOS button
8. SPI_DEBUG	SPI debug header-for factory use only
9. SATA1~5	Serial ATA connectors
10. PWR_BTN	Power on button
11. RST_BTN	Reset button
12. F_PANEL	Front panel switch/LED header
13. F_USB1~3	Front panel USB headers
14. CASE	Chassis detect header
15. ME_UNLOCK	ME unlock header-for factory use only
16. SPK	Speaker header
17. TPM	TPM module header
18. COM1~2	Onboard serial port headers
19. LPT	Onboard parallel port header
20. PCI1~2	32-bit add-on card slots
21. SPDIFO	SPDIF out header
22. PCIE4X1	PCI Express x4 slot
23. PCIE16X	PCI Express x16 graphics card slot
24. F_AUDIO	Front panel audio header
25. ATX12V4P	4-pin +12V power connector

This concludes Chapter 1. The next chapter explains how to install the motherboard.

Chapter 2
Installing the Motherboard

Safety Precautions

- Follow these safety precautions when installing the motherboard
- Wear a grounding strap attached to a grounded device to avoid damage from static electricity
- Discharge static electricity by touching the metal case of a safely grounded object before working on the motherboard
- Leave components in the static-proof bags they came in
- Hold all circuit boards by the edges. Do not bend circuit boards

Choosing a Computer Case

There are many types of computer cases on the market. The motherboard complies with the specifications for the Micro ATX system case. Some features on the motherboard are implemented by cabling connectors on the motherboard to indicators and switches on the system case. Make sure that your case supports all the features required. Make sure that your case has sufficient power and space for all drives that you intend to install.

Most cases have a choice of I/O templates in the rear panel. Make sure that the I/O template in the case matches the I/O ports installed on the rear edge of the motherboard.

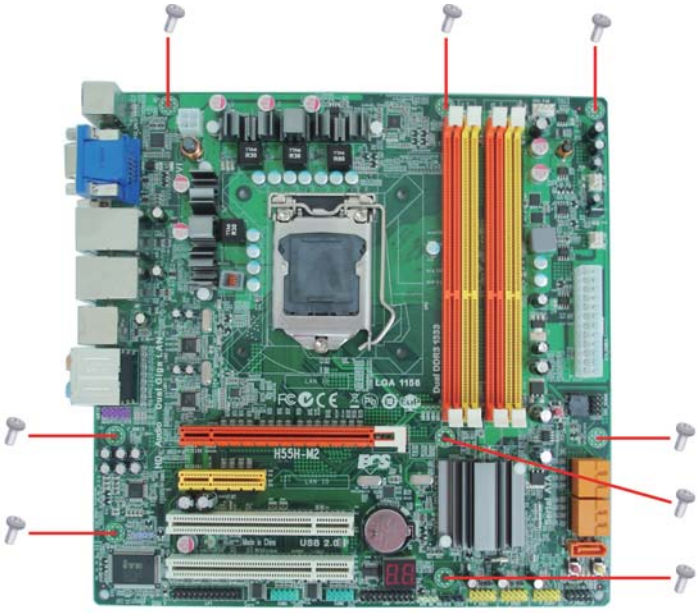
This motherboard carries a Micro ATX form factor of 244 x 244 mm. Choose a case that accommodates this form factor.

Installing the Motherboard in a Case

Refer to the following illustration and instructions for installing the motherboard in a case.

Most system cases have mounting brackets installed in the case, which correspond the holes in the motherboard. Place the motherboard over the mounting brackets and secure the motherboard onto the mounting brackets with screws.

Ensure that your case has an I/O template that supports the I/O ports and expansion slots on your motherboard.



Do not over-tighten the screws as this can stress the motherboard.

Checking clear CMOS button

The following illustration shows the location of the clear CMOS button.

Name	Type	Description	Setting (default)	
CLR_CMOS_BTN	button	CLEAR CMOS	NO PUSH: NORMAL PUSH: CLEAR Before clearing the CMOS, make sure to turn the system off.	 **CLR_CMOS_BTN**

To avoid the system unstability after clearing CMOS, we recommend users to enter the main BIOS setting page to "Load Default Settings" and then "Save Changes and Exit".

Installing Hardware

Installing the Processor

Caution: When installing a CPU heatsink and cooling fan make sure that you DO NOT scratch the motherboard or any of the surface-mount resistors with the clip of the cooling fan. If the clip of the cooling fan scrapes across the motherboard, you may cause serious damage to the motherboard or its components.

On most motherboards, there are small surface-mount resistors near the processor socket, which may be damaged if the cooling fan is carelessly installed.

Avoid using cooling fans with sharp edges on the fan casing and the clips. Also, install the cooling fan in a well-lit work area so that you can clearly see the motherboard and processor socket.

Before installing the Processor

This motherboard automatically determines the CPU clock frequency and system bus frequency for the processor. You may be able to change the settings in the system Setup Utility. We strongly recommend that you do not over-clock processors or other components to run faster than their rated speed.

Warning:
1. Over-clocking components can adversely affect the reliability of the system and introduce errors into your system. Over-clocking can permanently damage the motherboard by generating excess heat in components that are run beyond the rated limits.

2. Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.

This motherboard has an LGA1156 socket. When choosing a processor, consider the performance requirements of the system. Performance is based on the processor design, the clock speed and system bus frequency of the processor, and the quantity of internal cache memory and external cache memory.

Fail-Safe Procedures for Over-clocking

When end-users encounter failure after attempting over-clocking, please take the following steps to recover from it.

1. Shut down the computer.

2. Press and hold the “Page Up Key (PgUp)” of the keyboard, and then boot the PC up.

3. Two seconds after the PC boots up, release the “Page Up Key (PgUp)”.

4. The BIOS returns to the default setting by itself.

CPU Installation Procedure

The following illustration shows CPU installation components.

A. Opening of the Load Plate
- Put your thumb on the tail of the load plate and press the tail down.
- Rotate the load plate to fully open position.

B. Disengaging of the Load Lever
- Hold the hook of lever and pull it to the left side to clear retention tab.
- Rotate the load lever to fully open position.

C. Removing the Cap
- Be careful not to touch the contact at any time.

D. Inserting the Package
- Grasp the package. Ensure to grasp on the edge of the substrate.
- Make sure pin 1 indicator is on your bottom-left side.
- Aim at the socket and place the package carefully into the socket by purely vertical motion.

E. Closing the Load Plate
- Rotate the load plate onto the package IHS (Intergraded Heat Spreader).
- Engage the load lever while pressing down lightly onto the load plate.
- Secure the load lever with the hook under retention tab.

F. Fasten the cooling fan supporting base onto the CPU socket on the motherboard.

G. Make sure the CPU fan is plugged to the CPU fan connector. Please refer to the CPU cooling fan user's manual for more detail installation procedure.

1. To achieve better airflow rates and heat dissipation, we suggest that you use a high quality fan with 3800 rpm at least. CPU fan and heatsink installation procedures may vary with the type of CPU fan/ heatsink supplied. The form and size of fan/heatsink may also vary.

2. DO NOT remove the CPU cap from the socket before installing a CPU.

3. Return Material Authorization (RMA) requests will be accepted only if the motherboard comes with the cap on the LGA1156 socket.

Installing Memory Modules

This motherboard accommodates four memory modules. It can support four 240-pin DDR3 1333/1066. The total memory capacity is 16 GB.

DDR3 SDRAM memory module table

Memory module	Memory Bus
DDR3 1066	***533 MHz***
DDR3 1333	***667 MHz***

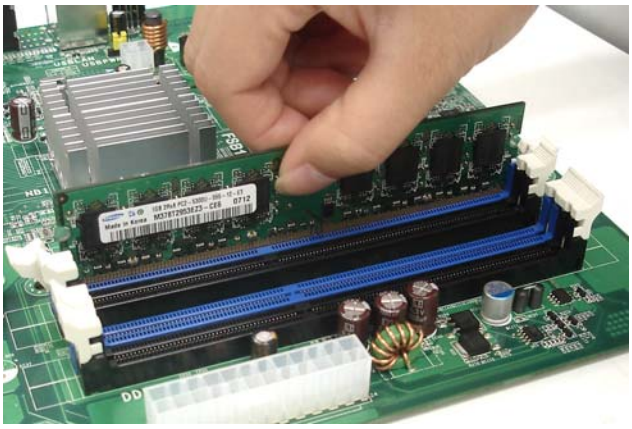
You must install at least one module in any of the four slots. The total memory capacity is up to 16 GB.

Do not remove any memory module from its antistatic packaging until you are ready to install it on the motherboard. Handle the modules only by their edges. Do not touch the components or metal parts. Always wear a grounding strap when you handle the modules.

Installation Procedure

Refer to the following to install the memory modules.

1. This motherboard supports unbuffered DDR3 SDRAM .
2. Push the latches on each side of the DIMM slot down.
3. Align the memory module with the slot. The DIMM slots are keyed with notches and the DIMMs are keyed with cutouts so that they can only be installed correctly.
4. Check that the cutouts on the DIMM module edge connector match the notches in the DIMM slot.
5. Install the DIMM module into the slot and press it firmly down until it seats correctly. The slot latches are levered upwards and latch on to the edges of the DIMM.
6. Install any remaining DIMM modules.



Installing the Motherboard

Table A: DDR3 (memory module) QVL (Qualified Vendor List)

The following DDR3 1600/1333/1066 memory modules have been tested and qualified for use with this motherboard.

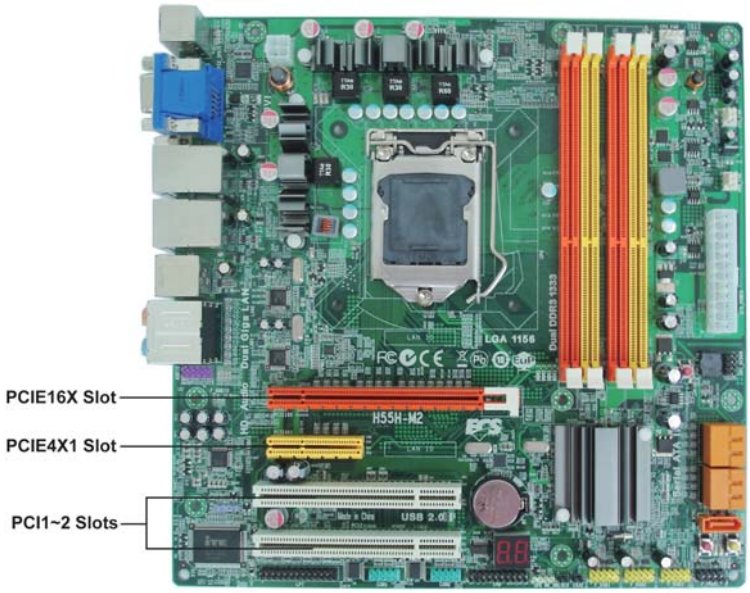
Type	Size	Vendor	Module Name
DDR3 1066	512 MB	ELPIDA	PC3-8500U-7-00-AP
		Hynix	HYMT112U64ZNF8-G8 AA
			HMT112U6AFP8C-G7N0 AA
		Kingston	KVR1066D3N7/1G
		Micron	MT8JTF12864AY-1G1D1
			MT8JTF12864AZ-1G1F1
		Ramaxel	RMR1810NA48E7F-1066-LF
		Samsung	GOLD BAR M378B2873DZ1-CF8 0818
	2 GB	elixir	M2Y2G64CB8HC9N-BE
			M2Y2G64CB8HC5N-BE
		Hynix	HYMT125U64ZNF8-G8 AA
			HMT125U6AFP8C-G7N0 AA
		Micron	MT16JTF25664AZ-1G1F1
			MT16JTF25664AY-1G1D1
			MT16JTF25664AY-1G1D1
		Nanya	M2Y2G64TU8HD5B-BD 0837.TW
		Samsung	M378B5673DZ1-CF8 0842
DDR3 1333	1 GB	A-data	AD3U1333B1G9-B
		Hynix	HMT112U6AFP8C-H9N0 AA
		KingMax	FLFD45F-B8KG9 NAES
		Kingston	KVR1333D3N9/1G
		Micron	MT8JTF12864AY-1G4D1
			MT8JTF12864AZ-1G4F1
		PSC	AL7F8G73D-DG1
		Ramaxel	RMR1810KD48E7F-1333
		Samsung	M378B2873DZ1-CH9
			M378B2873EH1-CH9
		Silicon Power	SP001GBLTU133S01
	2 GB	A-data	AD3U1333B2G9-B
		Apacer	78.A1GC6.9L1
		Elixir	M2F2G64CB8HA4N-CG0903.TW
		elixir	M2Y2G64CB8HC9N-CG
		G.SKILL	F3-10666CL9D-4GBRL
			F3-10666CL8D-4GBECO
			F3-10666CL9D-4GBNQ
		Hynix	HMT125U6AFP8C-H9N0 AA
		KingMax	FLFE85F-B8KG9 NEES
		Kingston	KVR1333D3N9/2G
		Micron	MT16JTF25664AY-1G4D1
		Nanya	NT2GC64B8HA0NF-CG0917.TW
		PSC	AL8F8G73D-DG1
		Samsung	M378B5673EH1-CH9
		Silicon Power	SP002GBLTU133S01
	4 GB	Kingston	KVR1333D3N9/4G

Type	Size	Vendor	Module Name
DDR3 1600	2 GB	A-data	High speed flying dragon
		Elixir	M2Y2G64CB8HA9N-DG 0928.TWr
		G.SKILL	F3-12800CL9D-4GBNQ
			F3-12800CL9D-4GBECO
			F3-12800CL7D-4GBECO
			F3-12800CL9D-4GBRL
		KingMax	FLGE85F-B8KG9 NEES
		Kingston	KVR1333D3N9/4G

Expansion Slots

Installing Add-on Cards

The slots on this motherboard are designed to hold expansion cards and connect them to the system bus. Expansion slots are a means of adding or enhancing the motherboard's features and capabilities. With these efficient facilities, you can increase the motherboard's capabilities by adding hardware that performs tasks that are not part of the basic system.



PCIE16X Slot The PCI Express slot is used to install an external PCI Express graphics card that is fully compliant to the PCI Express Gen 2.

PCIE4X1 Slot The PCI Express x4 slot is fully compliant to the PCI Express Base Specification revision 2.0.

PCI1~2 Slots This motherboard is equipped with one standard PCI slot. PCI stands for Peripheral Component Interconnect and is a bus standard for expansion cards, which for the most part, is a supplement of the older ISA bus standard. The PCI slot on this board is PCI v2.3 compliant.

Before installing an add-on card, check the documentation for the card carefully. If the card is not Plug and Play, you may have to manually configure the card before installation.

Follow these instructions to install an add-on card:

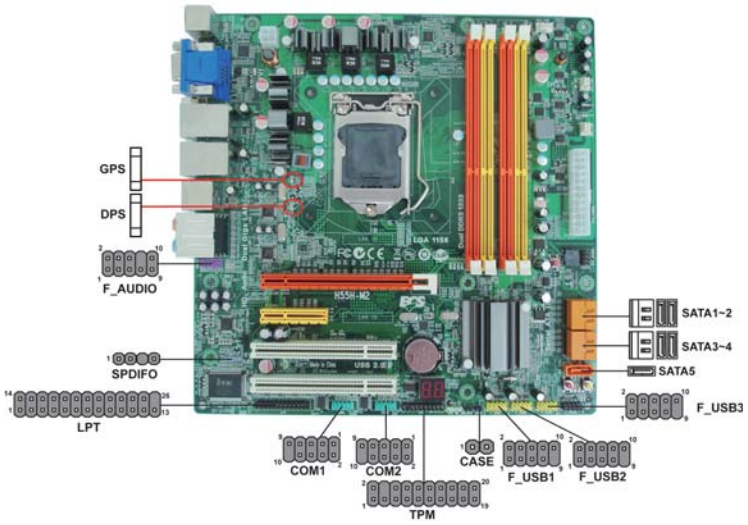
1. Remove a blanking plate from the system case corresponding to the slot you are going to use.
2. Install the edge connector of the add-on card into the expansion slot. Ensure that the edge connector is correctly seated in the slot.
3. Secure the metal bracket of the card to the system case with a screw.

1. For some add-on cards, for example graphics adapters and network adapters, you have to install drivers and software before you can begin using the add-on card.

2. The onboard PCI interface does not support 64-bit SCSI cards.

Connecting Optional Devices

Refer to the following for information on connecting the motherboard's optional devices:



SATA1~5: Serial ATA connectors

These connectors are used to support the new Serial ATA devices for the highest data transfer rates (3.0 Gb/s), simpler disk drive cabling and easier PC assembly. It eliminates limitations of the current Parallel ATA interface. But maintains register compatibility and software compatibility with Parallel ATA.

Pin	Signal Name	Pin	Signal Name
1	Ground	2	TX+
3	TX-	4	Ground
5	RX-	6	RX+
7	Ground	-	-

F_AUDIO: Front Panel Audio header for Azalia

This header allows the user to install auxiliary front-oriented microphone and line-out ports for easier access.

Pin	Signal Name	Pin	Signal Name
1	PORT 1L	2	AUD_GND
3	PORT 1R	4	PRESENCE#
5	PORT 2R	6	PORT1_JD
7	AUD_GND	8	KEY
9	PORT 2L	10	PORT2_JD

F_USB1~3: Front Panel USB headers

The motherboard has four USB ports installed on the rear edge I/O port array. Additionally, some computer cases have USB ports at the front of the case. If you have this kind of case, use auxiliary USB connector to connect the front-mounted ports to the motherboard.

Pin	Signal Name	Function
1	USBPWR	Front Panel USB Power
2	USBPWR	Front Panel USB Power
3	USB_FP_P0-	USB Port 0 Negative Signal
4	USB_FP_P1-	USB Port 1 Negative Signal
5	USB_FP_P0+	USB Port 0 Positive Signal
6	USB_FP_P1+	USB Port 1 Positive Signal
7	GND	Ground
8	GND	Ground
9	Key	No pin
10	USB_FP_OC0	Overcurrent signal

Please make sure that the USB cable has the same pin assignment as indicated above. A different pin assignment may cause damage or system hang-up.

SPDIFO: SPDIF out header

This is an optional header that provides an S/PDIF (Sony/Philips Digital Interface) output to digital multimedia device through optical fiber or coaxial connector.

Pin	Signal Name	Function
1	SPDIF	SPDIF digital output
2	+5VA	5V analog Power
3	Key	No pin
4	GND	Ground

CASE: Chassis Intrusion Detect Header

This detects if the chassis cover has been removed. This function needs a chassis equipped with instrusion detection switch and needs to be enabled in BIOS.

Pin 1-2	Function
Short	Chassis cover is removed
Open	Chassis cover is closed

TPM: Trusted Cryptography Module/TPM Module Header

This header allows user to protect the PC from impermissible visit.

Pin	Signal Name	Pin	Signal Name
1	CK_P_33M_TPM	2	GND
3	FWH4	4	NC
5	PCIRST_L1	6	SMBDATA
7	PCIRST_L1	8	FWH2
9	VCC3	10	FWH1
11	FWH0	12	GND
13	NC	14	NC
15	3VSBY	16	SIRQ
17	GND	18	GND
17	LPCPD_L	20	SMBCLK

COM1~2: Onboard serial port headers

Connect a serial port extension bracket to this header to add a second serial port to your system.

Pin	Signal Name	Function
1	DCDB	Data carry detect
2	NSINB	Serial Data In
3	NSOUTB	Serial Data Out
4	DTRB	Data terminal ready
5	GND	Ground
6	DSRB	Date set ready
7	RTSB	Request to send
8	CTSB	Clear to send
9	RI	Ring Indicator
10	Key	No pin

LPT: Onboard parallel port header

This is a header that can be used to connect to the printer, scanner or other devices.

Pin	Signal Name	Pin	Signal Name
1	STROBE	14	AFD
2	PD0	15	ERROR
3	PD1	16	INIT
4	PD2	17	SLCTIN
5	PD3	18	Ground
6	PD4	19	Ground
7	PD5	20	Ground
8	PD6	21	Ground
9	PD7	22	Ground
10	ACK	23	Ground
11	BUSK	24	Ground
12	PE	25	Ground
13	SLCT	26	Key

GPS/DPS: Graphics processor sensor/Discrete processor sensor

The GPS indicator LED shows if the installed CPU contains embedded graphics engine. When GPS LED is turned on, you may connect the display monitor directly to the mainboard's graphics port. (You may also choose to use a VGA adaptor card.)

GPS: Green LED turns on, onboard graphics enable

In contrary, the DPS LED turns on if the CPU does not contain embedded graphics and thus require a VGA adaptor card to connect the display monitor.

DPS: Red LED turns on, require VGA adaptor card

Installing a SATA Hard Drive

This section describes how to install SATA hard drives.

About SATA Connectors

Your motherboard features five SATA connectors supporting a total of five drives. SATA refers to Serial ATA (Advanced Technology Attachment) is the standard interface for the IDE hard drives which are currently used in most PCs. These connectors are well designed and will only fit in one orientation. Locate the SATA connectors on the motherboard and follow the illustration below to install the SATA hard drives.

Installing Serial ATA Hard Drives

To install the Serial ATA (SATA) hard drives, use the SATA cable that supports the Serial ATA protocol. This SATA cable comes with an SATA power cable. You can connect either end of the SATA cable to the SATA hard drive or the connector on the motherboard.

SATA cable (optional)

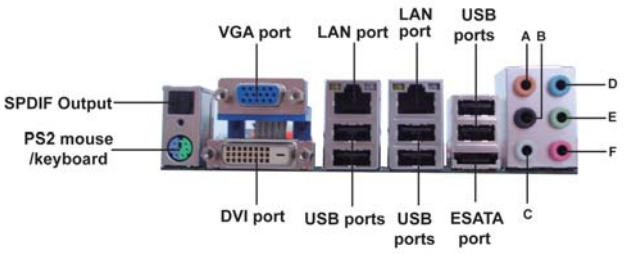
SATA power cable (optional)

Refer to the illustration below for proper installation:

1 Attach either cable end to the connector on the motherboard.
2 Attach the other cable end to the SATA hard drive.
3 Attach the SATA power cable to the SATA hard drive and connect the other end to the power supply.

Connecting I/O Devices

The backplane of the motherboard has the following I/O ports:



PS2 Keyboard Use the left PS/2 port to connect a PS/2 pointing device.

PS2 Mouse Use the right PS/2 port to connect a PS/2 keyboard.

DVI Port Use the DVI port to connect the monitor.

VGA Port Connect your monitor to the VGA port.

LAN Ports Connect RJ-45 jacks to LAN ports to connect your computer to the Network.

USB Ports Use the USB ports to connect USB devices.

SPDIF Output This jack connects to external optical digital audio output devices.

ESATA Port Use this port to connect to external SATA boxes or Serial ATA port multipliers.

Before connecting the eSATA cables, make sure to turn off the power of the external enclosure.

Audio Ports This motherboard may adopt 8-channel audio ports that correspond to the A,B, C, and E port respectively. In addition, all of the 3 ports, B, C, and E provide users with both right & left channels individually. Users please refer to the following note for specific port function definition.

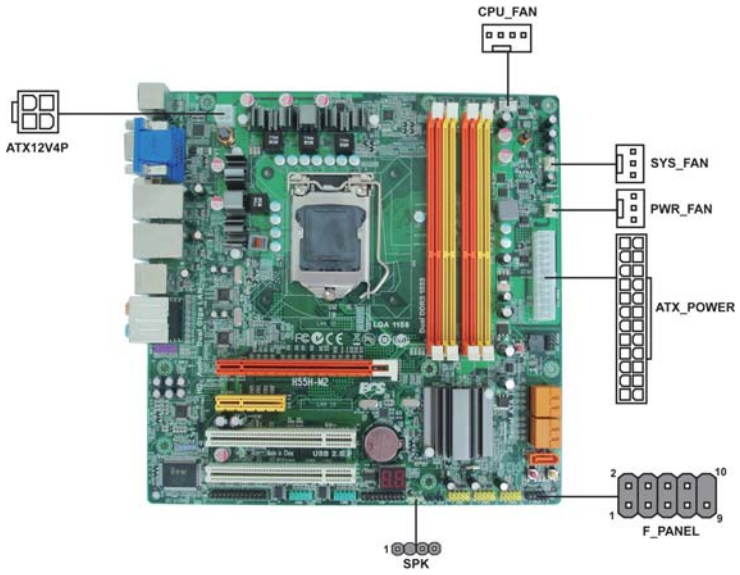
A: Center & Woofer	D: Line-in
B: Back Surround	E: Front Out
C: Side Surround	F: Mic_in Rear

The above port definition can be changed to audio input or audio output by changing the driver utility setting.

Connecting Case Components

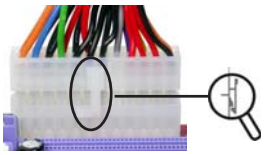
After you have installed the motherboard into a case, you can begin connecting the motherboard components. Refer to the following:

1 Connect the CPU cooling fan cable to **CPU_FAN**.
2 Connect the standard power supply connector to **ATX_POWER**.
3 Connect the case switches and indicator LEDs to the **F_PANEL**.
4 Connect the system cooling fan connector to **SYS_FAN**.
5 Connect the auxiliary case power supply connector to **ATX12V4P**.
6 Connect the power cooling fan connector to **PWR_FAN**.
7 Connect the case speaker cable to **SPK**.



Connecting 24-pin power cable

The ATX_POWER 24-pin connector allows you to connect to ATX v2.x power supply.

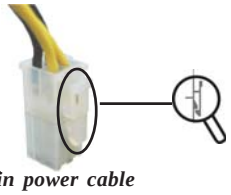


24-pin power cable

With ATX v2.x power supply, users please note that when installing 24-pin power cable, the latches of power cable and the ATX_POWER match perfectly.

Connecting 4-pin power cable

The ATX12V4P power connector is used to provide power to the CPU.



4-pin power cable

When installing 4-pin power cable, the latches of power cable and the ATX12V4P match perfectly.

CPU_FAN: CPU Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor
4	PWM	PWM

Users please note that the fan connector supports the CPU cooling fan of 1.1A ~ 2.2A (26.4W max) at +12V.

ATX_POWER: ATX 24-pin Power Connector

Pin	Signal Name	Pin	Signal Name
1	+3.3V	13	+3.3V
2	+3.3V	14	-12V
3	Ground	15	Ground
4	+5V	16	PS_ON
5	Ground	17	Ground
6	+5V	18	Ground
7	Ground	19	Ground
8	PWRGD	20	-5V
9	+5VSB	21	+5V
10	+12V	22	+5V
11	+12V	23	+5V
12	+3.3V	24	Ground

SYS_FAN/PWR_FAN: Cooling FAN Power Connector

Pin	Signal Name	Function
1	GND	System Ground
2	+12V	Power +12V
3	Sense	Sensor

SPK: Internal speaker

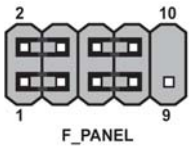
Pin	Signal Name
1	VCC
2	Key
3	NC
4	Signal

ATX12V4P: ATX 12V Power Connector

Pin	Signal Name
1	Ground
2	Ground
3	+12V
4	+12V

Front Panel Header

The front panel header (F_PANEL) provides a standard set of switch and LED headers commonly found on ATX or micro-ATX cases. Refer to the table below for information:



Pin	Signal	Function	Pin	Signal	Function
1	HD_LED_P	Hard disk LED (+)	2	FP PWR/SLP	*MSG LED (+)
3	HD_LED_N	Hard disk LED (-)	4	FP PWR/SLP	*MSG LED (-)
5	RST_SW_N	Reset Switch (-)	6	PWR_SW_P	Power Switch (+)
7	RST_SW_P	Reset Switch (+)	8	PWR_SW_N	Power Switch (-)
9	RSVD	Reserved	10	Key	No pin

** MSG LED (dual color or single color)*

Hard Drive Activity LED

Connecting pins 1 and 3 to a front panel mounted LED provides visual indication that data is being read from or written to the hard drive. For the LED to function properly, an IDE drive should be connected to the onboard IDE interface. The LED will also show activity for devices connected to the SCSI (hard drive activity LED) connector.

Power/Sleep/Message waiting LED

Connecting pins 2 and 4 to a single or dual-color, front panel mounted LED provides power on/off, sleep, and message waiting indication.

Reset Switch

Supporting the reset function requires connecting pins 5 and 7 to a momentary-contact switch that is normally open. When the switch is closed, the board resets and runs POST.

Power Switch

Supporting the power on/off function requires connecting pins 6 and 8 to a momentary-contact switch that is normally open. The switch should maintain contact for at least 50 ms to signal the power supply to switch on or off. The time requirement is due to internal de-bounce circuitry. After receiving a power on/off signal, at least two seconds elapses before the power supply recognizes another on/off signal.

This concludes Chapter 2. The next chapter covers the BIOS.

Chapter 3

Using BIOS

About the Setup Utility

The computer uses the latest "American Megatrends Inc. " BIOS with support for Windows Plug and Play. The CMOS chip on the motherboard contains the ROM setup instructions for configuring the motherboard BIOS.

The BIOS (Basic Input and Output System) Setup Utility displays the system's configuration status and provides you with options to set system parameters. The parameters are stored in battery-backed-up CMOS RAM that saves this information when the power is turned off. When the system is turned back on, the system is configured with the values you stored in CMOS.

The BIOS Setup Utility enables you to configure:

- Hard drives, diskette drives and peripherals
- Video display type and display options
- Password protection from unauthorized use
- Power Management features

The settings made in the Setup Utility affect how the computer performs. Before using the Setup Utility, ensure that you understand the Setup Utility options.

This chapter provides explanations for Setup Utility options.

The Standard Configuration

A standard configuration has already been set in the Setup Utility. However, we recommend that you read this chapter in case you need to make any changes in the future.

This Setup Utility should be used:

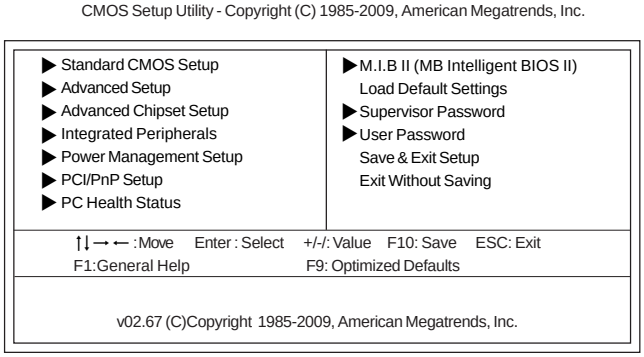
- when changing the system configuration
- when a configuration error is detected and you are prompted to make changes to the Setup Utility
- when trying to resolve IRQ conflicts
- when making changes to the Power Management configuration
- when changing the password or making other changes to the Security Setup

Entering the Setup Utility

When you power on the system, BIOS enters the Power-On Self Test (POST) routines. POST is a series of built-in diagnostics performed by the BIOS. After the POST routines are completed, the following message appears:

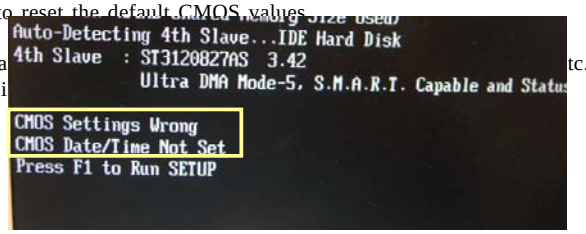
Press DEL to enter SETUP

Press the delete key to access the BIOS Setup Utility.

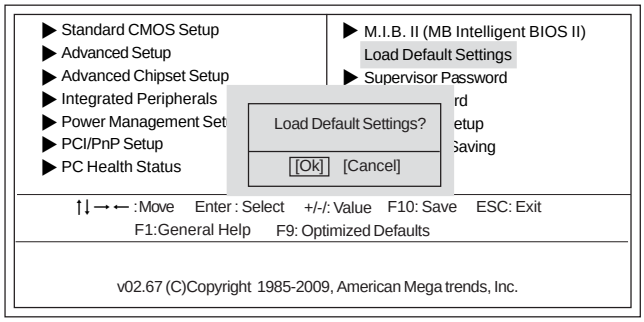

CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
▶ Standard CMOS Setup
▶ Advanced Setup
▶ Advanced Chipset Setup
▶ Integrated Peripherals
▶ Power Management Setup
▶ PCI/PnP Setup
▶ PC Health Status
▶ M.I.B II (MB Intelligent BIOS II)
Load Default Settings
▶ Supervisor Password
▶ User Password
Save & Exit Setup
Exit Without Saving
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults
v02.67 (C)Copyright 1985-2009, American Megatrends, Inc.

Resetting the Default CMOS Values

When powering on for the first time, the POST screen may show a "CMOS Settings Wrong" message. This standard message will appear following a clear CMOS data at factory by the manufacturer. You simply need to Load Default Settings to reset the default CMOS values.


Auto-Detecting 4th Slave...IDE Hard Disk
4th Slave : ST3120827AS 3.42
Ultra DMA Mode-5, S.M.A.R.T. Capable and Status
CMOS Settings Wrong
CMOS Date/Time Not Set
Press F1 to Run SETUP

Note: Cha tc. may also trigger thi


CMOS Setup Utility -- Copyright (C) 1985-2009, American Megatrends, Inc.
▶ Standard CMOS Setup
▶ Advanced Setup
▶ Advanced Chipset Setup
▶ Integrated Peripherals
▶ Power Management Set
▶ PCI/PnP Setup
▶ PC Health Status
▶ M.I.B. II (MB Intelligent BIOS II)
Load Default Settings
▶ Supervisor Password
Load Default Settings?
[Ok] [Cancel]
↑↓→←:Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults
v02.67 (C)Copyright 1985-2009, American Mega trends, Inc.

Using BIOS

When you start the Setup Utility, the main menu appears. The main menu of the Setup Utility displays a list of the options that are available. A highlight indicates which option is currently selected. Use the cursor arrow keys to move the highlight to other options. When an option is highlighted, execute the option by pressing <Enter>.

Some options lead to pop-up dialog boxes that prompt you to verify that you wish to execute that option. Other options lead to dialog boxes that prompt you for information.

Some options (marked with a triangle ▶) lead to submenus that enable you to change the values for the option. Use the cursor arrow keys to scroll through the items in the submenu.

In this manual, default values are enclosed in parenthesis. Submenu items are denoted by a triangle ▶.

The default BIOS setting for this motherboard apply for most conditions with optimum performance. We do not suggest users change the default values in the BIOS setup and take no responsibility to any damage caused by changing the BIOS settings.

BIOS Navigation Keys

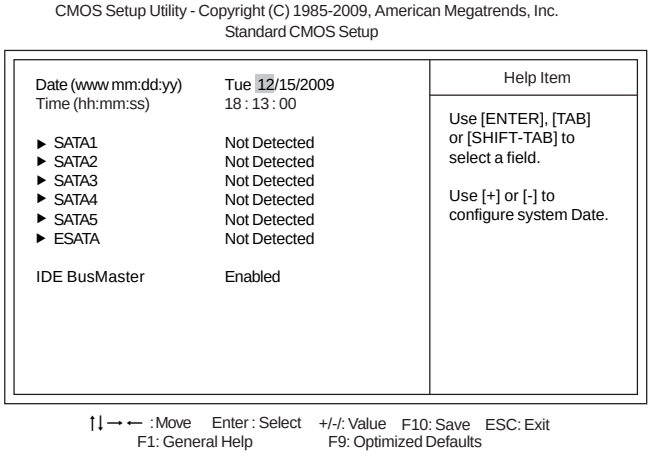
The BIOS navigation keys are listed below:

KEY	FUNCTION
ESC	Exits the current menu
↑↓→←	Scrolls through the items on a menu
+/-/	Modifies the selected field's values
Enter	Select
F9	Loads an optimized setting for better performance
F10	Saves the current configuration and exits setup
F1	Displays a screen that describes all key functions

For the purpose of better product maintenance, we reserve the right to change the BIOS items presented in the manual. The BIOS setup screens shown in this chapter are for reference only. Please visit our website for updated manual.

Standard CMOS Setup

This option displays basic information about your system.

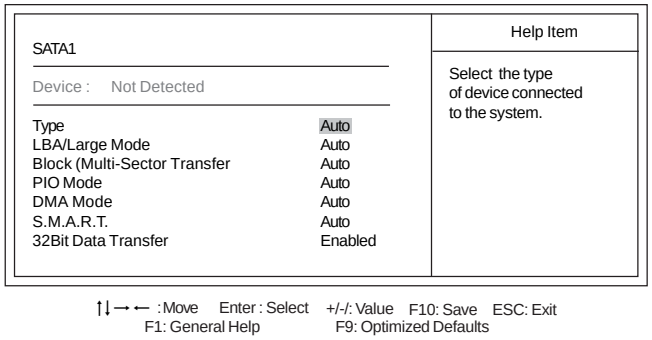

CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Standard CMOS Setup
Date (www mm:dd:yy) Tue 12/15/2009
Time (hh:mm:ss) 18 : 13 : 00
▶ SATA1 Not Detected
▶ SATA2 Not Detected
▶ SATA3 Not Detected
▶ SATA4 Not Detected
▶ SATA5 Not Detected
▶ ESATA Not Detected
IDE BusMaster Enabled
Help Item
Use [ENTER], [TAB] or [SHIFT-TAB] to select a field.
Use [+] or [-] to configure system Date.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Date & Time

The Date and Time items show the current date and time on the computer. If you are running a Windows OS, these items are automatically updated whenever you make changes to the Windows Date and Time Properties utility.

► SATA1~5/ESATA

This motherboard supports six SATA channels and each channel allows one SATA device to be installed. Use these items to configure each device on the SATA channel.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
SATA1
SATA1
Device : Not Detected
Type Auto
LBA/Large Mode Auto
Block (Multi-Sector Transfer Auto
PIO Mode Auto
DMA Mode Auto
S.M.A.R.T. Auto
32Bit Data Transfer Enabled
Help Item
Select the type of device connected to the system.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Type (Auto)

Use this item to configure the type of the IDE device that you specify. If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

LBA/Large Mode (Auto)

Use this item to set the LBA/Large mode to enhance hard disk performance by optimizing the area the hard disk is visited each time.

Block (Multi-Sector Transfer) (Auto)

If the feature is enabled, it will enhance hard disk performance by reading or writing more data during each transfer.

PIO Mode (Auto)

Use this item to set the PIO mode to enhance hard disk performance by optimizing the hard disk timing.

DMA Mode (Auto)

DMA capability allows users to improve the transfer-speed and data-integrity for compatible IDE devices.

S.M.A.R.T. (Auto)

The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) system is a diagnostics technology that monitors and predicts device performance. S.M.A.R.T. software resides on both the disk drive and the host computer.

32Bit Data Transfer (Enabled)

Use this item to enable or disable 32Bit Data Transfer.

Press <Esc> to return to the Standard CMOS Setup page.

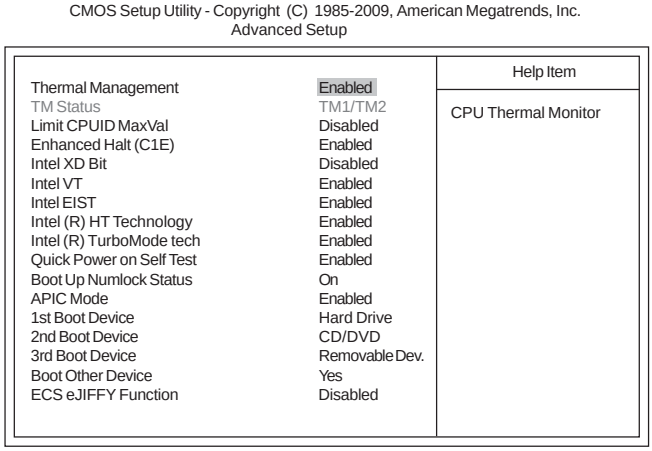
IDE BusMaster (Enabled)

This item enables or disables the DMA under DOS mode. We recommend you to leave this item at the default value.

Press <Esc> to return to the main menu setting page.

Advanced Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Advanced Setup
Help Item
CPU Thermal Monitor
Thermal Management Enabled
TM Status TM1/TM2
Limit CPUID MaxVal Disabled
Enhanced Halt (C1E) Enabled
Intel XD Bit Disabled
Intel VT Enabled
Intel EIST Enabled
Intel (R) HT Technology Enabled
Intel (R) TurboMode tech Enabled
Quick Power on Self Test Enabled
Boot Up Numlock Status On
APIC Mode Enabled
1st Boot Device Hard Drive
2nd Boot Device CD/DVD
3rd Boot Device Removable Dev.
Boot Other Device Yes
ECS eJIFFY Function Disabled
↑↓→←: Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Thermal Management (Enabled)

This item displays CPU's temperature and enables you to set a safe temperature to Prescott CPU.

TM Status (TM1/TM2)

This item shows TM function status if CPU can support TM function.

Limit CPUID MaxVal (Disabled)

Use this item to enable or disable the Max CPU ID value limit. When supports Prescott and LGA775 CPUs, enables this to prevent the system from "rebooting" when trying to install Windows NT 4.0.

Enhanced Halt (C1E) (Enabled)

This item enables or disables enhanced halt (C1E).

Intel XD Bit (Disabled)

This item allows users to enable or disable the Intel XD bit.

Intel VT (Enabled)

When enabled, a VMM can utilize the additional hardware capabilities provided by Vandor Poor Technology.

Intel EIST (Enabled)

This item allows users to enable or disable the EIST (Enhanced Intel SpeedStep technology).

Intel (R) HT Technology (Enabled)

This item enables or disables Intel HT technology support.

Intel (R) TurboMode tech (Enabled)

This item enables or disables Intel TurboMode Technology support.

Quick Power on Self Test (Enabled)

Enable this item to shorten the power on testing (POST) and have your system start up faster. You might like to enable this item after you are confident that your system hardware is operating smoothly.

Boot Up Numlock Status (On)

This item defines if the keyboard Num Lock key is active when your system is started.

APIC Mode (Enabled)

This item allows you to enable or disable the APIC (Advanced Programmable Interrupt Controller) mode. APIC provides symmetric multi-processing (SMP) for systems, allowing support for up to 60 processors.

1st/2nd/3rd Boot Device (Hard Drive/CD/DVD/Removable Dev.)

Use this item to determine the device order the computer used to look for an operating system to load at start-up time. The devices showed here will be different depending on the exact devices installed on your motherboard.

Boot Other Device (Yes)

When enabled, the system searches all other possible locations for an operating system if it fails to find one in the devices specified under the First, Second and Third boot devices.

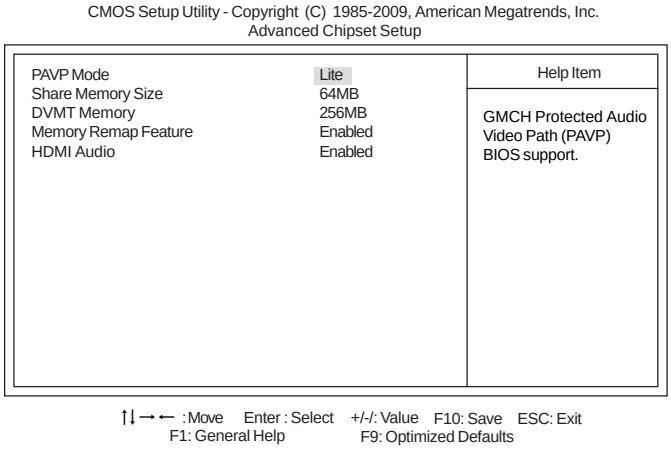
ECS eJIFFY Function (Disabled)

Use this item to enable or disable the ECS eJIFFY Function. eJIFFY is ECS unique software program for the quick access to the internet without entering O.S. Please refer to Chapter 5 to know more about eJIFFY.

Press <Esc> to return to the main menu setting page.

Advanced Chipset Setup

This page sets up more advanced information about your system. Handle this page with caution. Any changes can affect the operation of your computer.



PAVP Mode (Lite)

This item allows you to select the PAVP (Protected Audio-Video Path) mode.PAVP supports secure playback of Intel HD Audio and Video content.

Share Memory Size (64MB)

This item lets you allocate a portion of the main memory for the onboard VGA display application.

DVMT Memory (256MB)

When set to Fixed Mode, the graphics driver will reserve a fixed portion of the system memory as graphics memory, according to system and graphics requirements.

Memory Remap Feature (Enabled)

This item allows you to remap the overlapped PCI memory above the total physical memory if you have a 64 bit OS and 8 GB of RAM.

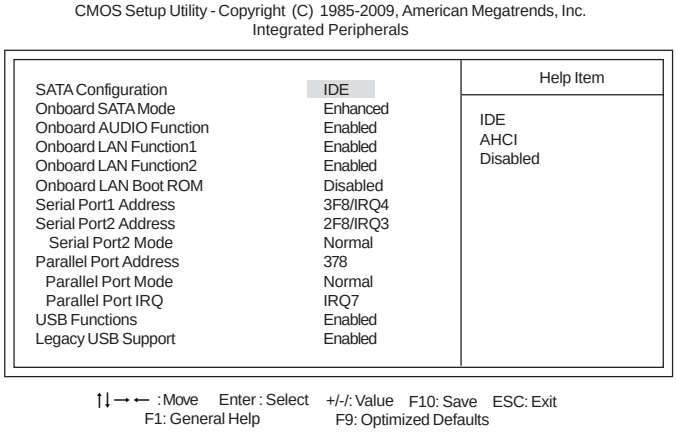
HDMI Audio (Enabled)

This item is used to enable or disable the NB HDMI audio support.

Press <Esc> to return to the main menu setting page.

Integrated Peripherals

This page sets up some parameters for peripheral devices connected to the system.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Integrated Peripherals
SATA Configuration IDE
Onboard SATA Mode Enhanced
Onboard AUDIO Function Enabled
Onboard LAN Function1 Enabled
Onboard LAN Function2 Enabled
Onboard LAN Boot ROM Disabled
Serial Port1 Address 3F8/IRQ4
Serial Port2 Address 2F8/IRQ3
Serial Port2 Mode Normal
Parallel Port Address 378
Parallel Port Mode Normal
Parallel Port IRQ IRQ7
USB Functions Enabled
Legacy USB Support Enabled
Help Item
IDE
AHCI
Disabled
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

SATA Configuration (IDE)

Use this item to show the Serial ATA Configuration.

Onboard SATA Mode (Enhanced)

Use this item to select the mode of the Serial ATA.

Onboard Audio Function (Enabled)

Use this item to enable or disable the onboard audio device.

Onboard LAN Function1/2 (Enabled)

Use this item to enable or disable the onboard LAN function.

Onboard LAN Boot ROM (Disabled)

Use this item to enable or disable the booting from the onboard LAN or a network add-in card with a remote boot ROM installed.

Serial Port1/2 Address (3F8/IRQ4/2F8/IRQ3)

Use this item to enable or disable the onboard COM1 serial port, and to assign a port address.

Serial Port2 Mode (Normal)

If Serial Port 2 Address is not disabled, it allows you to set the Serial Port 2 Mode.

Parallel Port Address (378)

Use this item to enable or disable the onboard LPT parallel port, and to assign a port address.

Parallel Port Mode (Normal)

Use this item to select the parallel port mode. You can select Normal (Standard Parallel Port), ECP (Extended Capabilities Port), EPP (Enhanced Parallel Port), or BPP (Bi-Directional Parallel Port).

Parallel Port IRQ (IRQ7)

Use this item to assign IRQ to the parallel port.

USB Functions (Enabled)

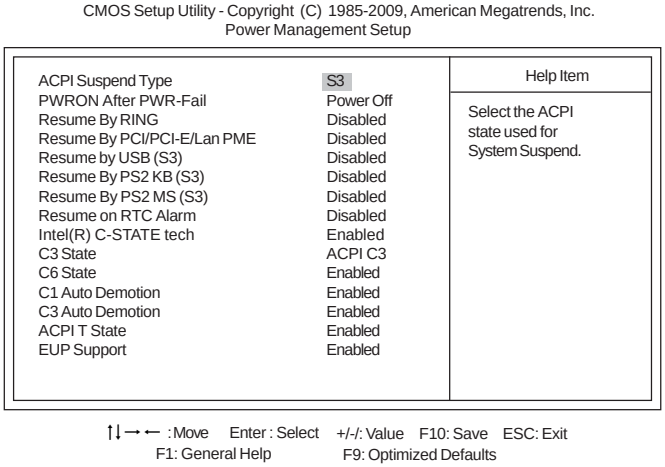
Use this item to enable or disable the USB function.

Legacy USB Support (Enabled)

Use this item to enable or disable support for legacy USB device.

Power Management Setup

This page sets up some parameters for system power management operation.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Power Management Setup
ACPI Suspend Type S3
PWRON After PWR-Fail Power Off
Resume By RING Disabled
Resume By PCI/PCI-E/Lan PME Disabled
Resume by USB (S3) Disabled
Resume By PS2 KB (S3) Disabled
Resume By PS2 MS (S3) Disabled
Resume on RTC Alarm Disabled
Intel(R) C-STATE tech Enabled
C3 State ACPI C3
C6 State Enabled
C1 Auto Demotion Enabled
C3 Auto Demotion Enabled
ACPI T State Enabled
EUP Support Enabled
Help Item
Select the ACPI state used for System Suspend.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

ACPI Suspend Type (S3)

Use this item to define how your system suspends. In the default, S3, the suspend mode is a suspend to RAM, i.e, the system shuts down with the exception of a refresh current to the system memory.

PWRON After PWR-Fail (Power Off)

This item enables your computer to automatically restart or return to its operating status.

Resume By RING (Disabled)

An input signal on the serial Ring Indicator (RI) line (in other words, an incoming call on the modem) awakens the system from a soft off state.

Resume By PCI/PCI-E/Lan PME (Disabled)

These items specify whether the system will be awakened from power saving modes when activity or input signal of the specified hardware peripheral or component is detected.

Resume by USB (S3) (Disabled)

This item allows you to enable/disable the USB device wakeup function from S3/S4 mode.

Resume By PS2 KB (S3) (Disabled)

This item enables or disables you to allow keyboard activity to awaken the system from power saving mode.

Resume By PS2 MS (S3) (Disabled)

This item enables or disables you to allow mouse activity to awaken the system from power saving mode.

Resume on RTC Alarm (Disabled)

The system can be turned off with a software command. If you enable this item, the system can automatically resume at a fixed time based on the system RTC (realtime clock). Use the items below this one to set the date and time of the wake-up alarm. You must use an ATX power supply in order to use this feature.

Intel(R) C-STATE tech (Enabled)

C State: CPU idle is set to C2/C3/C4.

C3 State (ACPIC3)

Nehalem C state action select.

C6 State (Enabled)

Nehalem C state action select.

C1 Auto Demotion (Enabled)

When enable, CPU will conditionally demote C3/C6/C7 requests to C1 based on uncore auto-demote information.

C3 Auto Demotion (Enabled)

When enable, CPU will conditionally demote C6/C7 requests to C3 based on uncore auto-demote information.

ACPI T State (Enabled)

Report processor throttling in ACPI

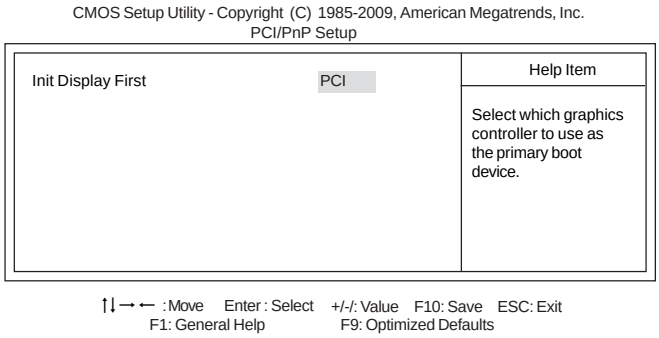
EUP Support (Enabled)

When enabled, system can not resume by some devices (PCI/PCIE/PME/Ring/RTC,etc) at S5 state. You can use this item to save power.

Press <Esc> to return to the main menu setting page.

PCI/PnP Setup

This page sets up some parameters for devices installed on the PCI bus and those utilizing the system plug and play capability.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
PCI/PnP Setup
Init Display First
PCI
Help Item
Select which graphics controller to use as the primary boot device.
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help
F9: Optimized Defaults

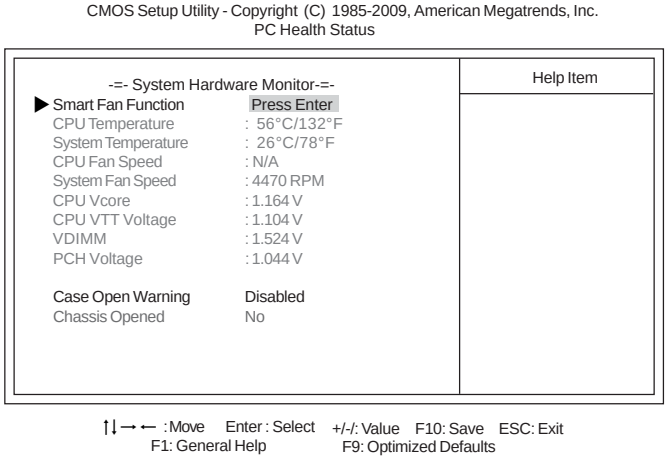
Init Display First (PCI)

Use this item to select which graphics controller to use as the primary boot devices.

Press <Esc> to return to the main menu setting page.

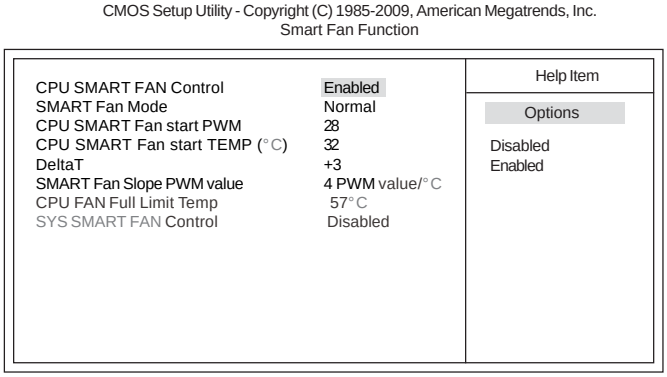
PC Health Status

On motherboards support hardware monitoring, this item lets you monitor the parameters for critical voltages, temperatures and fan speeds.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
PC Health Status
-=- System Hardware Monitor-=-
▶ Smart Fan Function Press Enter
CPU Temperature : 56°C/132°F
System Temperature : 26°C/78°F
CPU Fan Speed : N/A
System Fan Speed : 4470 RPM
CPU Vcore : 1.164 V
CPU VTT Voltage : 1.104 V
VDIMM : 1.524 V
PCH Voltage : 1.044 V
Case Open Warning Disabled
Chassis Opened No
Help Item
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

▶Smart Fan Function (Press Enter)

Scroll to this item and press <Enter> to view the following screen:

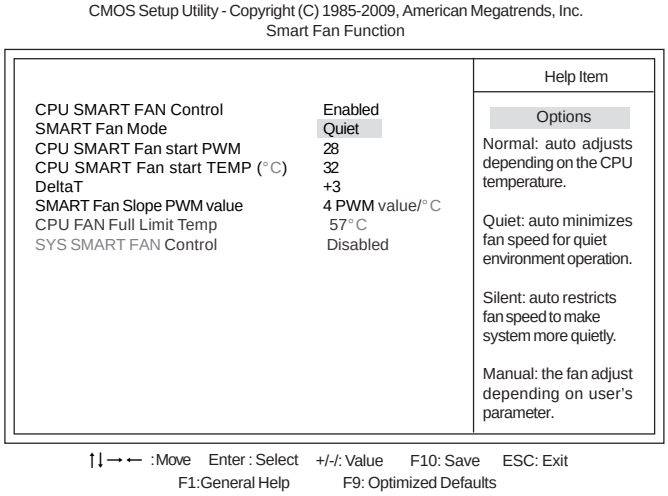

CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Smart Fan Function
CPU SMART FAN Control Enabled
SMART Fan Mode Normal
CPU SMART Fan start PWM 28
CPU SMART Fan start TEMP (°C) 32
DeltaT +3
SMART Fan Slope PWM value 4 PWM value/°C
CPU FAN Full Limit Temp 57°C
SYS SMART FAN Control Disabled
Help Item
Options
Disabled
Enabled
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

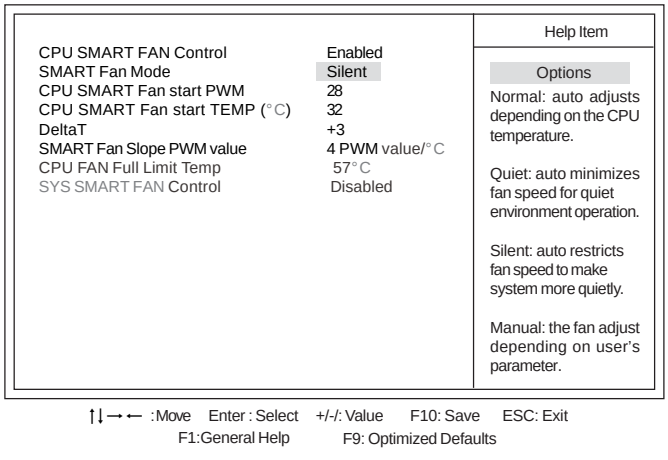
CPU SMART FAN Control (Enabled)

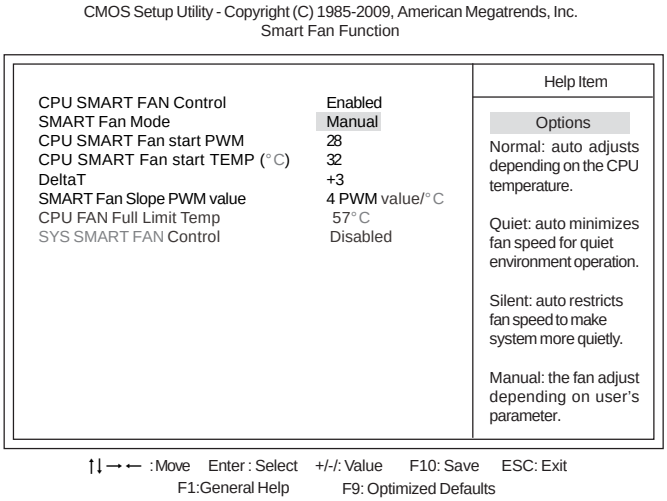
This item allows you to enable/disable the control of the CPU fan speed by changing the fan voltage.

SMART Fan Mode (Normal)

This item allows you to select the fan mode (Normal, Quiet, Silent, or Manual) for a better operation environment. If you choose Normal mode, the fan speed will be auto adjusted depending on the CPU temperature. If you choose Quite mode, the fan speed will be auto minimized for quiet environment. If you choose Silent mode, the fan speed will be auto restricted to make system more quietly. If you choose Manual mode, the fan speed will be adjust depending on users' parameters.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Smart Fan Function
Help Item
CPU SMART FAN Control
SMART Fan Mode
CPU SMART Fan start PWM
CPU SMART Fan start TEMP (°C)
DeltaT
SMART Fan Slope PWM value
CPU FAN Full Limit Temp
SYS SMART FAN Control
Enabled
Quiet
28
32
+3
4 PWM value/°C
57°C
Disabled
Options
Normal: auto adjusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
Silent: auto restricts fan speed to make system more quietly.
Manual: the fan adjust depending on user's parameter.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Smart Fan Function
Help Item
CPU SMART FAN Control
SMART Fan Mode
CPU SMART Fan start PWM
CPU SMART Fan start TEMP (°C)
DeltaT
SMART Fan Slope PWM value
CPU FAN Full Limit Temp
SYS SMART FAN Control
Enabled
Silent
28
32
+3
4 PWM value/°C
57°C
Disabled
Options
Normal: auto adjusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
Silent: auto restricts fan speed to make system more quietly.
Manual: the fan adjust depending on user's parameter.
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Smart Fan Function
CPU SMART FAN Control
SMART Fan Mode
CPU SMART Fan start PWM
CPU SMART Fan start TEMP (°C)
DeltaT
SMART Fan Slope PWM value
CPU FAN Full Limit Temp
SYS SMART FAN Control
Enabled
Manual
28
32
+3
4 PWM value/°C
57°C
Disabled
Help Item
Options
Normal: auto adjusts depending on the CPU temperature.
Quiet: auto minimizes fan speed for quiet environment operation.
Silent: auto restricts fan speed to make system more quietly.
Manual: the fan adjust depending on user's parameter.
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Press <Esc> to return to the PC Health Status page.

System Component Characteristics

These items display the monitoring of the overall inboard hardware health events, such as System & CPU temperature, CPU & DIMM voltage, CPU & system fan speed,...etc.

- CPU Temperature
- System Temperature
- CPU Fan Speed
- System Fan Speed
- CPU Vcore
- CPU VTT Voltage
- VDIMM
- PCH Voltage

Case Open Warning (Disabled)

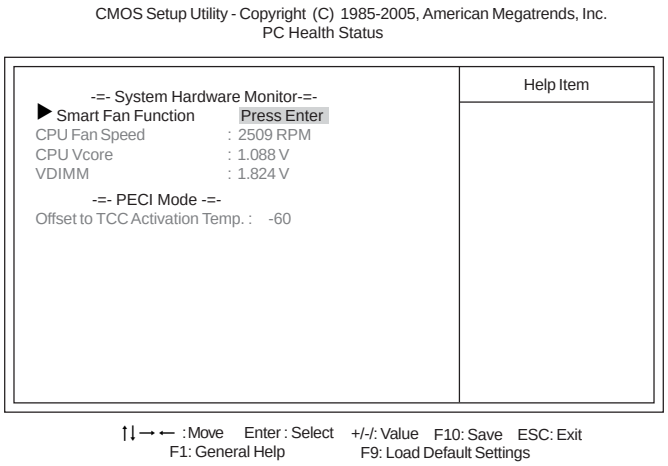
This item enables or disables the warning if the case is opened up, and the item below indicates the current status of the case.

Chassis Opened (No)

This item indicates whether the case has been opened.

Press <Esc> to return to the main menu setting page.

ECS supports the latest PECI host technology. While using Core™ 2 Quad or Core™ 2 Duo CPU which supports PECI, the original images of the BIOS item "PC Health Status" and "Smart FAN Function" will be replaced by PECI mode and negative number. (The max data from PECI is zero.)

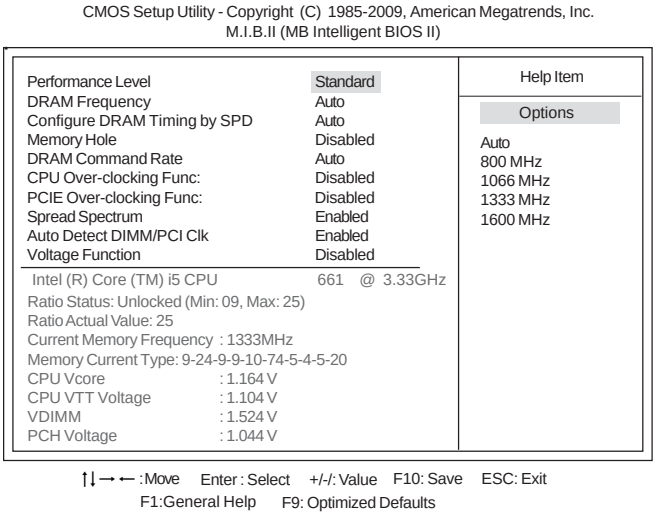

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
PC Health Status
-=- System Hardware Monitor-=-
▶ Smart Fan Function Press Enter
CPU Fan Speed : 2509 RPM
CPU Vcore : 1.088 V
VDIMM : 1.824 V
-=- PECI Mode -=-
Offset to TCC Activation Temp. : -60
Help Item
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
Smart Fan Function
SMART Fan Control Disabled
Help Item
Options
Disabled
Enabled
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

Press <Esc> to return to the PC Health Status page.

M.I.B. II (MB Intelligent BiosII)

This page enables you to set the clock speed and system bus for your system. The clock speed and system bus are determined by the kind of processor you have installed in your system.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
M.I.B.II (MB Intelligent BIOS II)
Performance Level Standard
DRAM Frequency Auto
Configure DRAM Timing by SPD Auto
Memory Hole Disabled
DRAM Command Rate Auto
CPU Over-clocking Func: Disabled
PCIE Over-clocking Func: Disabled
Spread Spectrum Enabled
Auto Detect DIMM/PCI Clk Enabled
Voltage Function Disabled
Intel (R) Core (TM) i5 CPU 661 @ 3.33GHz
Ratio Status: Unlocked (Min: 09, Max: 25)
Ratio Actual Value: 25
Current Memory Frequency : 1333MHz
Memory Current Type: 9-24-9-9-10-74-5-4-5-20
CPU Vcore : 1.164 V
CPU VTT Voltage : 1.104 V
VDIMM : 1.524 V
PCH Voltage : 1.044 V
Help Item
Options
Auto
800 MHz
1066 MHz
1333 MHz
1600 MHz
↑↓→←: Move Enter: Select +/-/: Value F10: Save ESC: Exit
F1:General Help F9: Optimized Defaults

Performance Level (Standard)

This item shows the performance level of the components, the options are: Standard and Enhanced.

DRAM Frequency (Auto)

This item enables users to adjust the DRAM frequency. The default setting is auto and we recommend users leave the setting unchanged. Modify it at will may cause the system to be unstable.

Configure DRAM Timing by SPD (Auto)

When this item is set to enable, the DDR timing is configured using SPD. SPD (Serial Presence Detect) is located on the memory modules, BIOS reads information coded in SPD during system boot up.

Memory Hole (Disabled)

This item allows users to enable or disable memory hole remapping.

DRAM Command Rate (Auto)

This item specifies the rate of the DRAM Command.

CPU Over-clocking Func (Disabled)

This item decides the CPU over-clocking function installed in your system. If the over-clocking fails, please turn off the system power. And then, hold the PageUp key (similar to the Clear CMOS function) and turn on the power, the BIOS will recover the safe default.

PCIE Over-clocking Func (Disabled)

This item enables or disables the PCIE over-clocking function.

Spread Spectrum (Enabled)

If you enable spread spectrum, it can significantly reduce the EMI (Electro-Magnetic Interference) generated by the system.

Auto Detect DIMM/PCI Clk (Enabled)

When this item is enabled, BIOS will disable the clock signal of free DIMM/PCI slots.

Voltage Function (Disabled)

Use this item to enable or disable the Voltage Function. If enable, users can increasethe hardware voltage through BIOS settings.

Intel (R) Core (TM) i5 CPU 661 @ 3.33GHz

This is display-only field and displays the information of the CPU installed in your computer.

Ratio Status/Ratio Actual Value (Unlocked/25)

These items show the locked/unlocked ratio status and the actual ratio of the CPU installed in your system.

Current Memory Frequency (1333MHz)

This item displays the current memory frequency.

Memory Current Type (9-24-9-9-10-74-5-4-5-20)

This item displays the current memory type.

CPU Vcore (1.164 V)

This item displays the current CPU voltage.

CPU VTT Voltage (1.104 V)

This item displays the current CPU VTT voltage.

VDIMM (1.524 V)

This item displays the current DIMM voltage.

PCH Voltage (1.044 V)

This item displays the current PCH voltage.

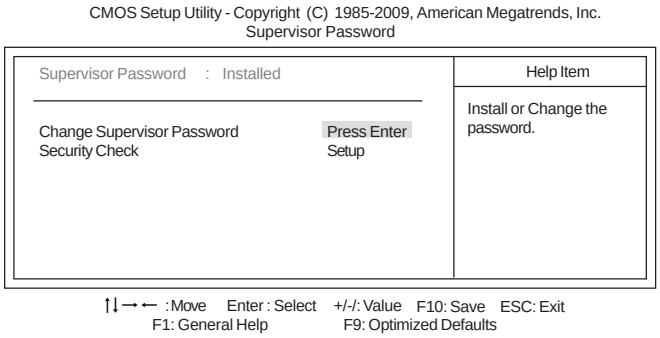
Press <Esc> to return to the main menu setting page.

Load Default Settings

This option opens a dialog box that lets you install stability-oriented defaults for all appropriate items in the Setup Utility. Select <OK> and then press <Enter> to install the defaults. Select <Cancel> and then press <Enter> to not install the defaults.

Supervisor Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2009, American Megatrends, Inc.
Supervisor Password
Supervisor Password : Installed
Help Item
Install or Change the password.
Change Supervisor Password
Press Enter
Security Check
Setup
↑↓→← :Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Optimized Defaults

Supervisor Password (Not Installed)

This item indicates whether a supervisor password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

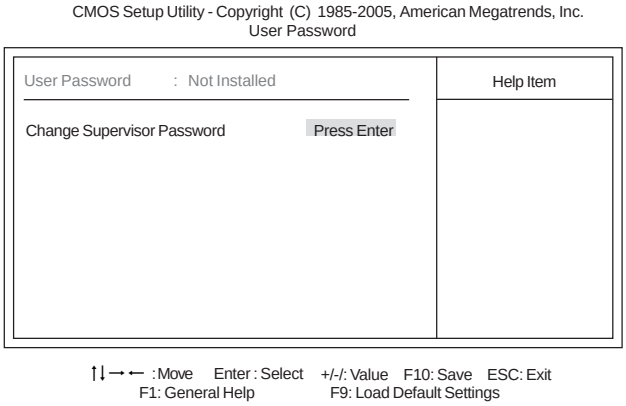
Security Check (Setup)

If you have installed password protection, this item defines if the password is required at system start up, or if it is only reqiured when a user tries to enter the Setup Utility.

Press <Esc> to return to the main menu setting page.

User Password

This page helps you install or change a password.


CMOS Setup Utility - Copyright (C) 1985-2005, American Megatrends, Inc.
User Password
User Password : Not Installed
Help Item
Change Supervisor Password
Press Enter
↑↓→← : Move Enter : Select +/-/: Value F10: Save ESC: Exit
F1: General Help F9: Load Default Settings

User Password (Not Installed)

This item indicates whether a user password has been set. If the password has been installed, *Installed* displays. If not, *Not Installed* displays.

Change Supervisor Password (Press Enter)

You can select this option and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.

Press <Esc> to return to the main menu setting page.

Save & Exit Setup

Highlight this item and press <Enter> to save the changes that you have made in the Setup Utility and exit the Setup Utility. When the Save and Exit dialog box appears, select [OK] to save and exit, or select [Cancel] to return to the main menu.

Exit Without Saving

Highlight this item and press <Enter> to discard any changes that you have made in the Setup Utility and exit the Setup Utility. When the Exit Without Saving dialog box appears, select [OK] to discard changes and exit, or select [Cancel] to return to the main menu.

If you have made settings that you do not want to save, use the "Exit Without Saving" *item and select [OK] to discard any changes you have made.*

Updating the BIOS

You can download and install updated BIOS for this motherboard from the manufacturer's Web site. New BIOS provides support for new peripherals, improvements in performance, or fixes for known bugs. Install new BIOS as follows:

1. If your motherboard has a BIOS protection jumper, change the setting to allow BIOS flashing.
2. If your motherboard has an item called Firmware Write Protect in Advanced BIOS features, disable it. (Firmware Write Protect prevents BIOS from being overwritten.)
3. Prepare a bootable device or create a bootable system disk. (Refer to Windows online help for information on creating a bootable system disk.)
4. Download the Flash Utility and new BIOS file from the manufacturer's Web site. Copy these files to the bootable device.
5. Turn off your computer and insert the bootable device in your computer. (You might need to run the Setup Utility and change the the boot priority items on the Advanced BIOS Features Setup page, to force your computer to boot from the bootable device first.)
6. At the C:\ or A:\ prompt, type the Flash Utility program name and the file name of the new BIOS and then press <Enter>. Example: AFUDOS.EXE 040706.ROM
7. When the installation is complete, remove the bootable device from the computer and restart your computer. If your motherboard has a Flash BIOS jumper, reset the jumper to protect the newly installed BIOS from being overwritten. The computer will restart automatically.

This concludes Chapter 3. Refer to the next chapter for information on the software supplied with the motherboard.

Chapter 4

Using the Motherboard Software

About the Software DVD-ROM/CD-ROM

The support software DVD-ROM/CD-ROM that is included in the motherboard package contains all the drivers and utility programs needed to properly run the bundled products. Below you can find a brief description of each software program, and the location for your motherboard version. More information on some programs is available in a README file, located in the same directory as the software. Before installing any software, always inspect the folder for files named README.TXT or something similar. These files may contain important information that is not included in this manual.

1. *Never try to install all software from folder that is not specified for use with your motherboard.*
2. *The notice of Intel HD audio installation (optional): The Intel High Definition audio functionality unexpectedly quits working in Windows Server 2003 Service Pack 1 or Windows XP Professional x64 Edition. Users need to download and install the update packages from the Microsoft Download Center "before" installing HD audio driver bundled in the Driver disk. Please log on to http://support.microsoft.com/default.aspx?scid=kb;en-us;901105#appliesto for more information.*

Auto-installing under Windows XP/Vista/7

The Auto-install DVD-ROM/CD-ROM makes it easy for you to install the drivers and software for your motherboard.

If the Auto-install DVD-ROM/CD-ROM does not work on your system, you can still install drivers through the file manager for your OS (for example, Windows Explorer). Refer to the Utility Folder Installation Notes later in this chapter.

The support software DVD-ROM/CD-ROM disc loads automatically under Windows XP/Vista/7. When you insert the DVD-ROM/CD-ROM disc in the DVD-ROM/CD-ROM drive, the autorun feature will automatically bring up the install screen. The screen has three buttons on it, Setup, Browse CD and Exit.

If the opening screen does not appear; double-click the file "setup.exe" in the root directory.

Drivers Tab

Setup	Click the **Setup** button to run the software installation program. Select from the menu which software you want to install.
Browse CD	The **Browse CD** button is the standard Windows command that allows you to open Windows Explorer and show the contents of the support disk. Before installing the software from Windows Explorer, look for a file named README.TXT or something similar. This file may contain important information to help you install the software correctly. Some software is installed in separate folders for different operating systems, such as Windows XP/Vista/7. Always go to the correct folder for the kind of OS you are using. In install the software, execute a file named SETUP.EXE by double-clicking the file and then following the instructions on the screen.
Exit	The **Exit** button closes the Auto Setup window.

Utilities Tab

Lists the software utilities that are available on the disk.

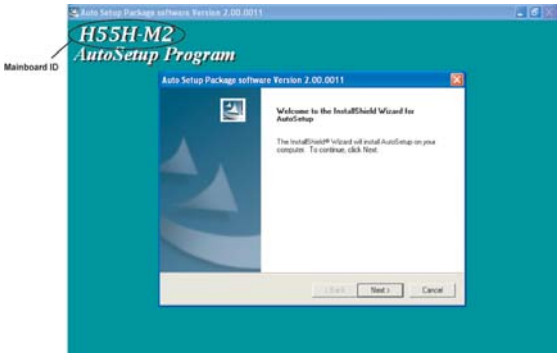
Information Tab

Displays the path for all software and drivers available on the disk.

Running Setup

Follow these instructions to install device drivers and software for the motherboard:

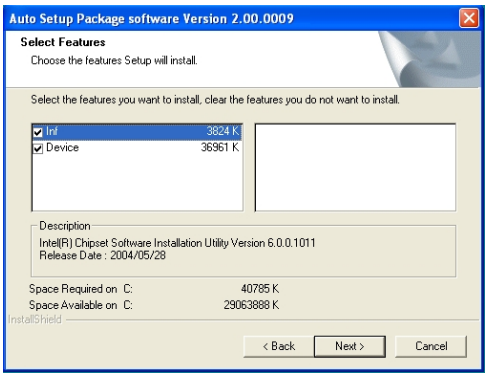
1. *Click **Setup.** The installation program begins:*



The following screens are examples only. The screens and driver lists will be different according to the motherboard you are installing.

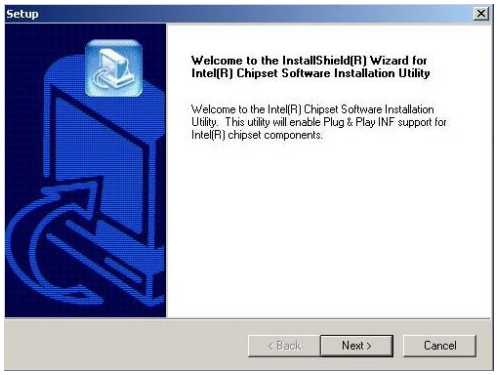
The motherboard identification is located in the upper left-hand corner.

2. *Click **Next.** The following screen appears:*


Auto Setup Package software Version 2.00.0009
Select Features
Choose the features Setup will install.
Select the features you want to install, clear the features you do not want to install.
Inf 3824 K
Device 36961 K
Description
Intel(R) Chipset Software Installation Utility Version 6.0.0.1011
Release Date : 2004/05/28
Space Required on C: 40785 K
Space Available on C: 29063888 K
InstallShield
< Back
Next >
Cancel

3. *Check the box next to the items you want to install. The default options are recommended.*

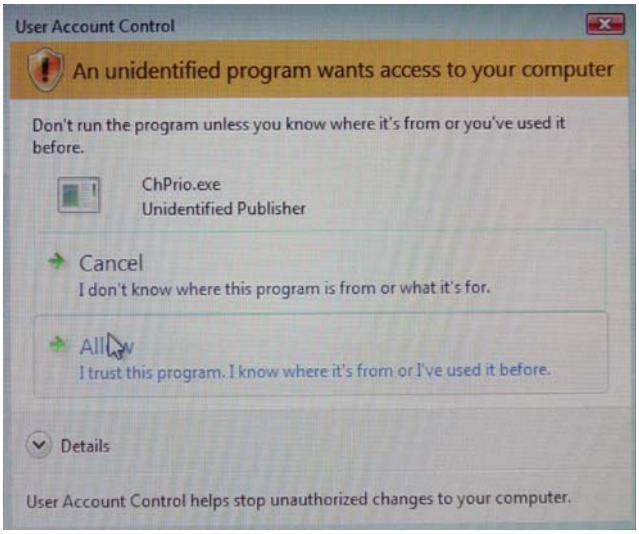
4. *Click **Next** run the Installation Wizard. An item installation screen appears:*


Setup
Welcome to the InstallShield(R) Wizard for Intel(R) Chipset Software Installation Utility
Welcome to the Intel(R) Chipset Software Installation Utility. This utility will enable Plug & Play INF support for Intel(R) chipset components.
< Back
Next >
Cancel

5. *Follow the instructions on the screen to install the items.*

Drivers and software are automatically installed in sequence. Follow the onscreen instructions, confirm commands and allow the computer to restart a few times to complete the installation.

Windows Vista/7 will appear below UAC (User Account Control) message after the system restart. You must select "Allow" to install the next driver. Continue this process to complete the drivers installation.


User Account Control
An unidentified program wants access to your computer
Don't run the program unless you know where it's from or you've used it before.
ChPrio.exe
Unidentified Publisher
Cancel
I don't know where this program is from or what it's for.
Allow
I trust this program. I know where it's from or I've used it before.
Details
User Account Control helps stop unauthorized changes to your computer.

Manual Installation

Insert the disk in the DVD-ROM/CD-ROM drive and locate the PATH.DOC file in the root directory. This file contains the information needed to locate the drivers for your motherboard.

Look for the chipset and motherboard model; then browse to the directory and path to begin installing the drivers. Most drivers have a setup program (SETUP.EXE) that automatically detects your operating system before installation. Other drivers have the setup program located in the operating system subfolder.

If the driver you want to install does not have a setup program, browse to the operating system subfolder and locate the readme text file (README.TXT or README.DOC) for information on installing the driver or software for your operating system.

Utility Software Reference

All the utility software available from this page is Windows compliant. They are provided only for the convenience of the customer. The following software is furnished under license and may only be used or copied in accordance with the terms of the license.

These software(s) are subject to change at anytime without prior notice. Please refer to the support disk for available software.

This concludes Chapter 4.

Chapter 5

Setting Up eJIFFY

Introduction

eJIFFY is a fast boot program under Linux. Instead of waiting Windows O.S to start execution, eJIFFY is ready to provide users the instant enjoyment on web browsing, photo review and online chat just within several seconds after boot up.

Note: eJIFFY is ECS ***optional*** feature utility corresponding to the DVD activation and BIOS setup. Please check the hard copy user's guide or product color-box to see if the model has embodded eJIFFY feature. (eJIFFY icon on color-box)

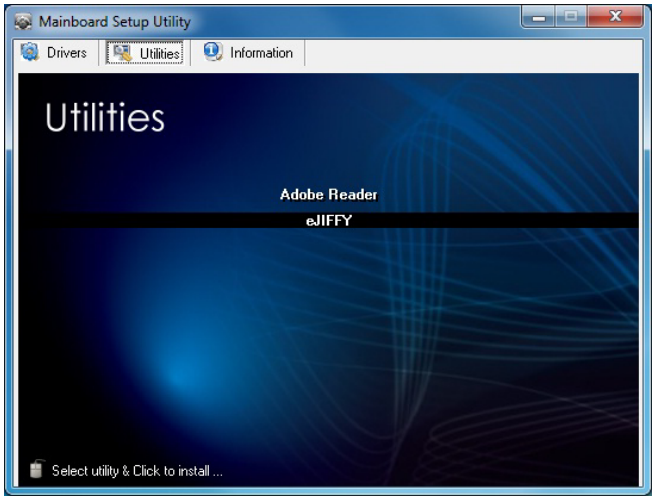
Version: 4.0

Installation and BIOS Setup

DVD Activation

Finish the DVD utility setup, and then set the BIOS to complete eJIFFY activation.

1. Insert ECS software utility DVD and enter below “Utilities” screen. Click eJIFFY feature item to install.



2. Follow the onscreen instructions to finish eJIFFY setup.

Setup - eJIFFY
Welcome to the eJIFFY Setup Wizard
This will install eJIFFY on your computer.
It is recommended that you close all other applications before continuing.
Click Next to continue, or Cancel to exit Setup.
Next >
Cancel

3. After setting up eJIFFY under Windows, you can switch eJIFFY display/keyboard language from English to your local language. The changes will be applied after rebooting.

Note: The keyboard language selection list offers several more regional keyboard setups to switch with the default English typing. Please refer to the usage FAQ for more tips.

4. Restart your computer after eJIFFY installation. Press <DEL> or click the BIOS Setup button on the post screen to enter the BIOS setup page after boot up.

5. And then enter the *Advanced Setup* page to enable the item *ECS eJIFFY Function*. Press F10 to save the configuration and exit. Restart your computer.

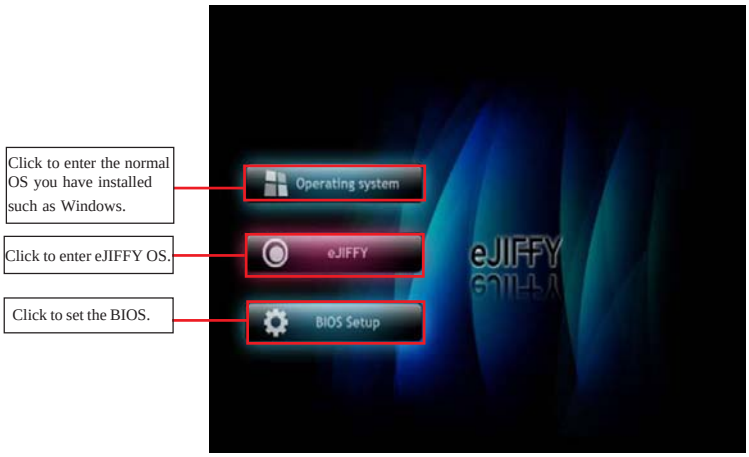
CMOS Setup Utility - Copyright (C) 1985-2007, American Megatrends, Inc.
Advanced Setup
HT Frequency Auto Auto
AMD C8Q Enabled
Quick Power on Self Test Enabled
Boot Up Numlock Status On
LOGO Display Enabled
APIC Mode Enabled
1st Boot Device ARY01 NVIDIA SPAN 1
2nd Boot Device CD/DVD
3rd Boot Device Removable Dev.
Hard Disk Drives Press Enter
Boot Other Device Yes
ECS eJIFFY Function Enabled
Restore Default Settings No
Help Item
Options
Disabled
Enabled
↑↓↔:Move Enter:Select +/-/:Value F10:Save ESC:Exit
F1:General Help F9:Load Default Settings

Note: 1. eJIFFY is available in SATA/IDE/AHCI mode. It does not support RAID configuration and the onboard 34-pin floppy drives.

2. Please refer to ECS website for new eJIFFY application updates.

Entering eJIFFY

The post screen appears within several seconds after boot up and it has three buttons on it, Operating system, eJIFFY and BIOS Setup.


Click to enter the normal OS you have installed such as Windows.
Click to enter eJIFFY OS.
Click to set the BIOS.
Operating system
eJIFFY
BIOS Setup
eJIFFY

If you click eJIFFY, the following screen will appear. And If you make no choice it will enter the normal OS automatically after ten seconds.

Feature Icons

The following illustration shows the main feature icons that eJIFFY provides on the menu.

eWeb: Firefox for web browsing/webmail and watching flash video.

ePix: Photo viewing.

ePal: On-line chat tool to use the most popular IMs in the world. (MSN, ICQ, AIM, etc.)

Shows ePal on-line connection status.

Shut Down/Restart: Ends your session and turns off the computer./Ends your session and restart the computer..

Click once to connect the storage disk to your computer. Click for the second time to remove your storage disk safely. (please refer to the FAQ for more usage information.)

Shows the network connection status.

Language Control Panel

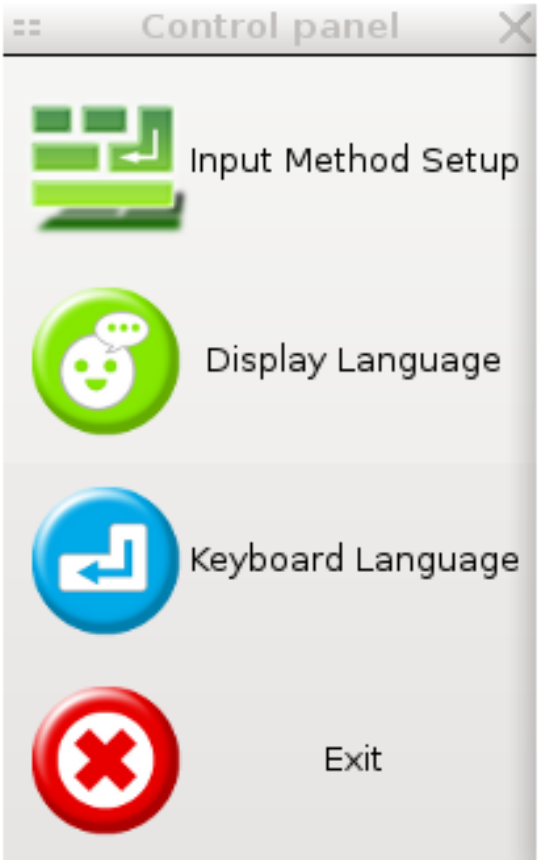
Switch Keyboard Languages

Usage FAQ

Language Control Panel: Besides setting English as the default interface, eJIFFY offers multi-language displays and keyboard settings for language-switch. Open the language control panel to select a preferable language setting.

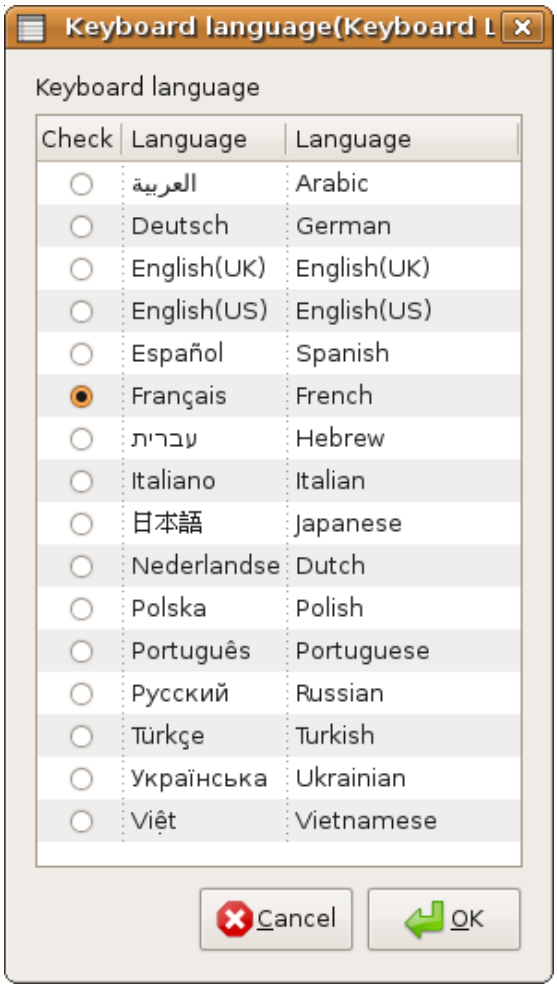
Keyboard Language Setup

Step1. Click to open the language control panel.



Step 2: Click “Keyboard Language” icon to open the keyboard selection list, which offers several regional keyboard settings besides default English keyboard.

Step 3: Click the selected keyboard language (e.g. French) and press “OK”.



Tips for Language Switch:

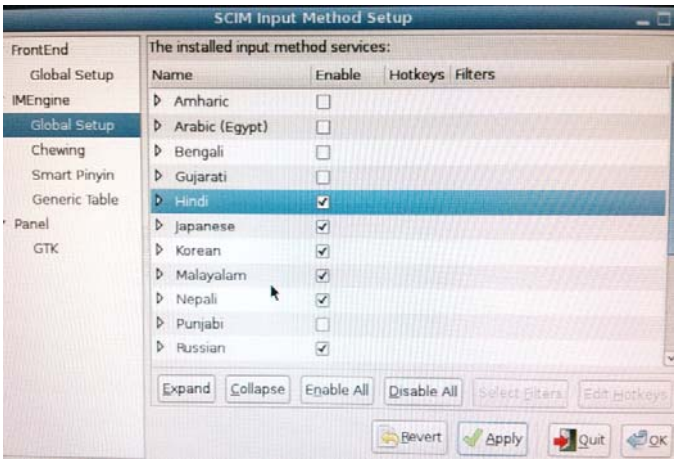
Tip 1: Click “Change Keyboard” icon to switch the typing language.

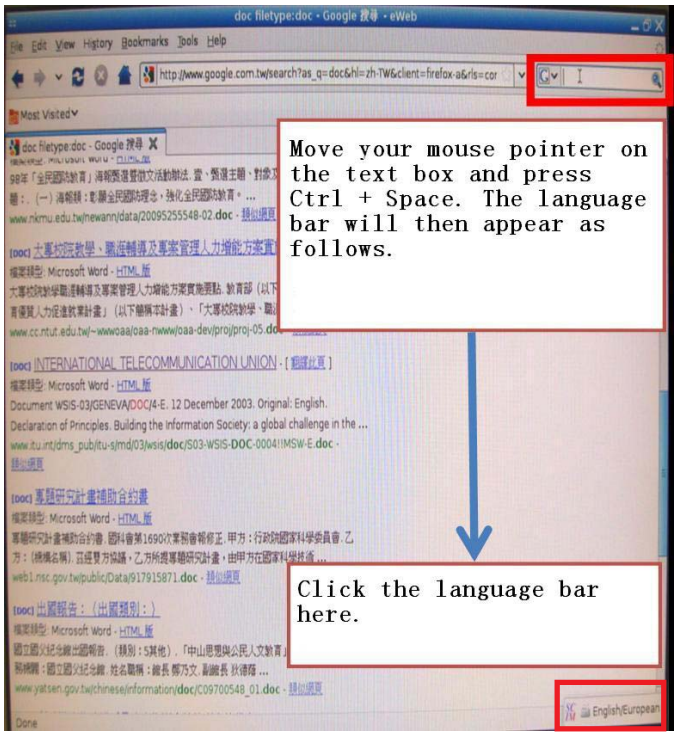
The typing language on text box will switch to the selected one:

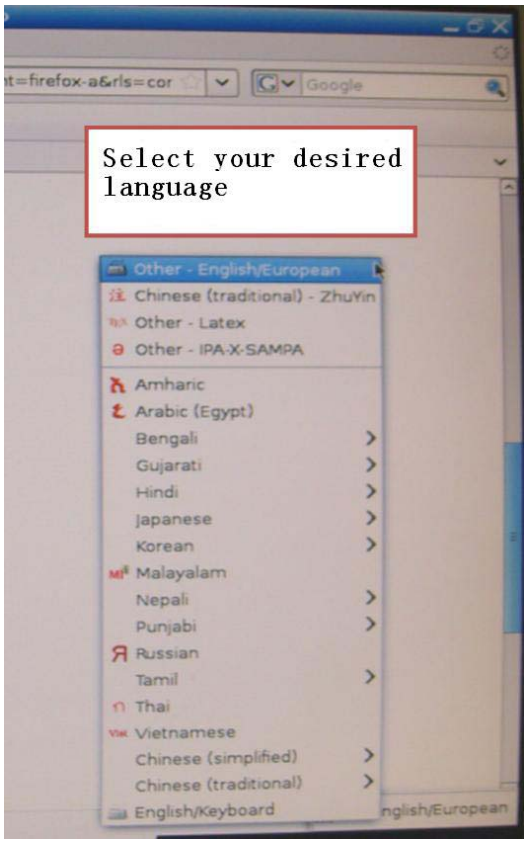
Click again to switch to English typing back.

Tip 2. If you use the default English keyboard, eJIFFY still offers other language inputs to switch with English.

Click to enable all possible language inputs you want to apply, and click “Apply”:

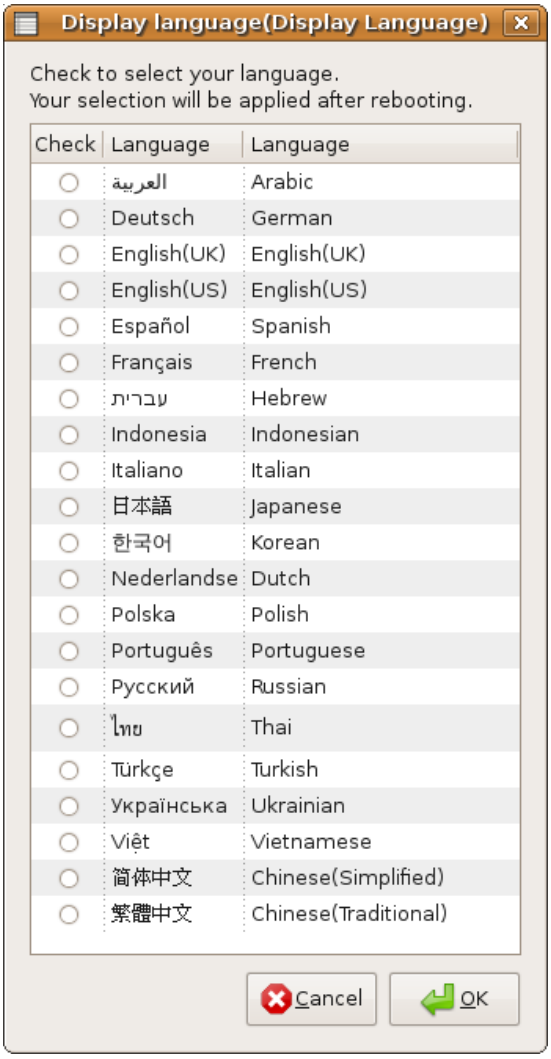

SCIM Input Method Setup
FrontEnd
Global Setup
IMEngine
Global Setup
Chewing
Smart Pinyin
Generic Table
Panel
GTK
The installed input method services:
Name
Enable
Hotkeys
Filters
Amharic
Arabic (Egypt)
Bengali
Gujarati
Hindi
Japanese
Korean
Malayalam
Nepali
Punjabi
Russian
Expand
Collapse
Enable All
Disable All
Select Filters
Edit Hotkeys
Revert
Apply
Quit
OK


Move your mouse pointer on the text box and press Ctrl + Space. The language bar will then appear as follows.
Click the language bar here.
English/European


t=firefox-a&rls=cor
Google
Select your desired language
Other - English/European
Chinese (traditional) - ZhuYin
Other - Latex
Other - IPA-X-SAMPA
Amharic
Arabic (Egypt)
Bengali
Gujarati
Hindi
Japanese
Korean
Malayalam
Nepali
Punjabi
Russian
Tamil
Thai
Vietnamese
Chinese (simplified)
Chinese (traditional)
English/Keyboard
nglish/European

Tip 3. How to change display language?

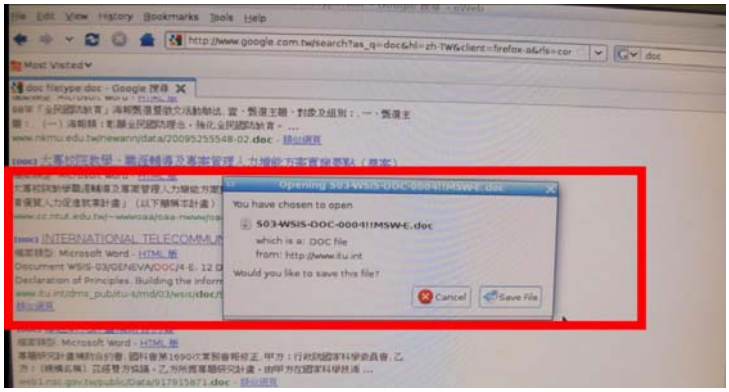
Open the Language Control Panel and click to show the display language list. Check your desired display language. Your selected display language will be applied after rebooting.



eWeb: Firefox for web browsing/webmail and watching flash video.

Q1: How to download files to hard disk through eWeb?

Click on the file link directly. Then select “Save File” in the pop-up window.



Note: 1. Before downloading files, please “mount” the storage devices to make sure the device is connected with eJIFFY interface. (Please refer to the usage FAQ to mount devices)

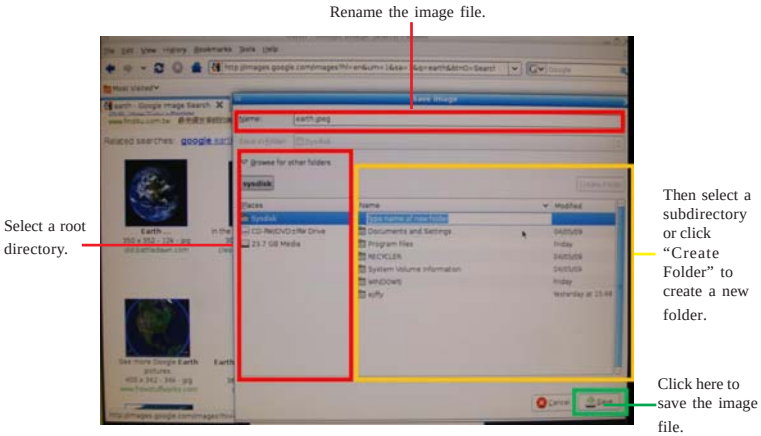
2. eWeb does not support Office Viewer/Reader/Writer format under eJIFFY interface. Please enter the Operating System to open Office files.

3. eWeb supports to open video/audio files online in Flash player format. Due to firefox limitation, the browser does not support files in Real player or Media player formats.

Q2: How to save image file through eWeb?

1. Select the image you want to save and press the right key of your mouse to show the menu, then click the option " Save Image As" from the menu.

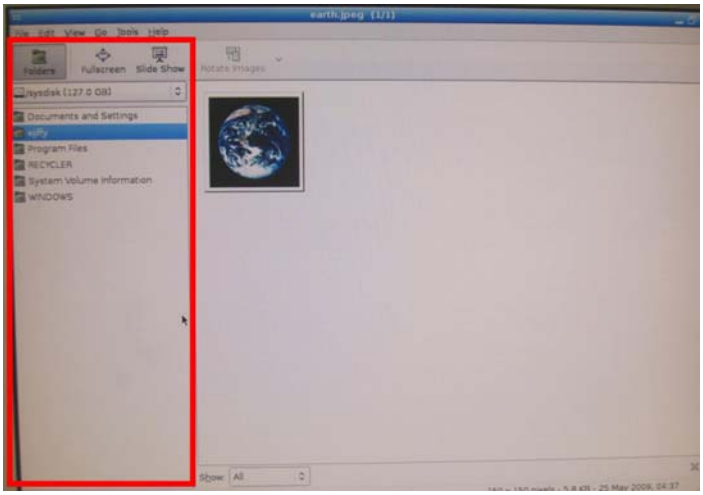
2. Then the "Save Image" window appears. You may rename the image file in the "Name" column and save the file in a folder as the following picture shows.


Rename the image file.
Select a root directory.
Then select a subdirectory or click "Create Folder" to create a new folder.
Click here to save the image file.

ePix: Photo viewing.

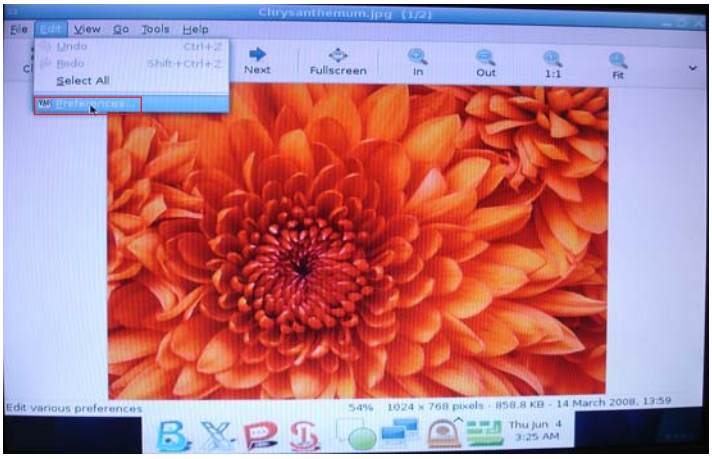
Q1: How to find image files saved in hard disk through ePix?

Enter the ePix window, then click the icon “Folder” located in the upper left-hand corner, then follow the path for the files you have saved to view the image files.

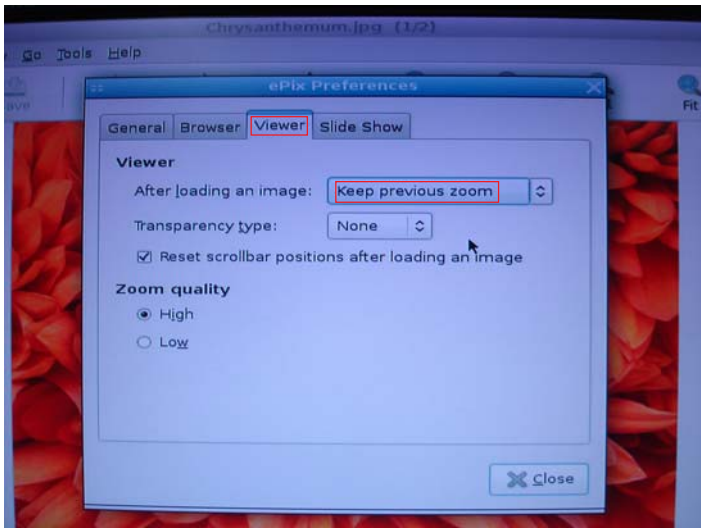


Q2: How to use the fit function under slide show?

1. Click “Edit” and select “Preferences” option from the menu.



2. Click “Viewer” and choose “Keep previous zoom” in “After loading an image”. Close the window and you can use the fit function under slide show now.



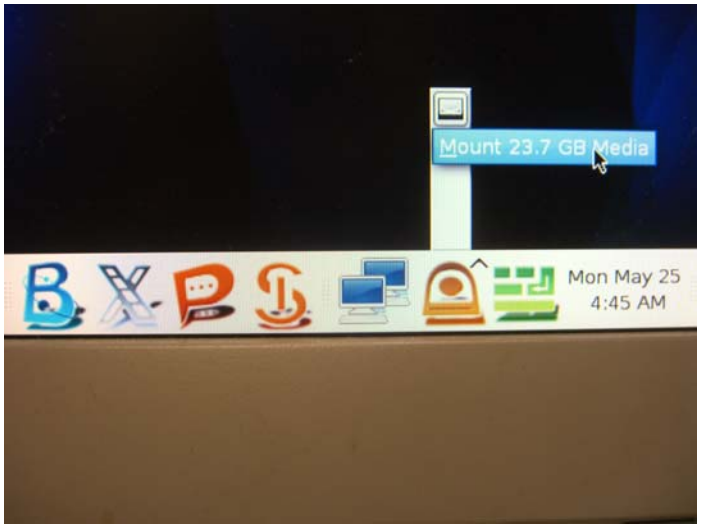
Note: ePix supports to view image files only. It cannot support Office Viewer or other forms beside image files. Supported image types are: BMP, JPEG, GIF (including GIF animations), PNG, TIFF, ICO and XPM.

Mount/Unmount Disk.

Q1: What does it mean for "Mount Disk"?

"Mount" means to connect the storage devices to eJIFFY interface.

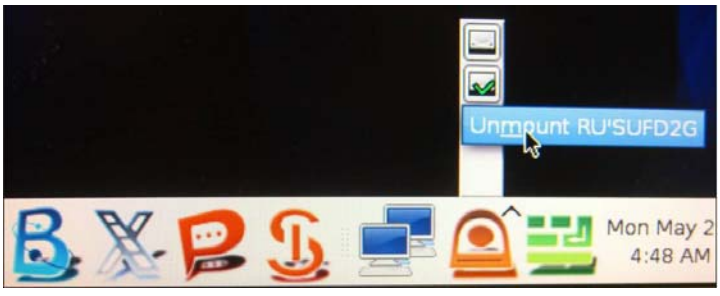
After plugging the external device to the computer such as USB drives, a new disk icon will appear as the following picture shows. Please click the "mount" prompt on the icon. It will change to to show the device is detected successfully.



Q2: What does it mean for "Unmount Disk"?

"Unmount" is to safely remove the storage devices.

To unplug the external storage devices such as USB drives, users need to clik the "Unmount" prompt as the following picture shows, then the icon will change to , you can remove the device now.



Memo

Chapter 6

Trouble Shooting

Start up problems during assembly

After assembling the PC for the first time you may experience some start up problems. Before calling for technical support or returning for warranty, this chapter may help to address some of the common questions using some basic troubleshooting tips.

a) System does not power up and the fans are not running.

1.Disassemble the PC to remove the VGA adaptor card, DDR memory, LAN, USB and other peripherals including keyboard and mouse. Leave only the motherboard, CPU with CPU cooler and power supply connected. Turn on again to see if the CPU and power supply fans are running.

2. Make sure to remove any unused screws or other metal objects such as screwdrivers from the inside PC case. This is to prevent damage from short circuit.

3. Check the CPU FAN connector is connected to the motherboard.

4. For Intel platforms check the pins on the CPU socket for damage or bent. A bent pin may cause failure to boot and sometimes permanent damage from short circuit.

5. Check the 12V power connector is connected to the motherboard.

6. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

b) Power is on, fans are running but there is no display

1. Make sure the monitor is turned on and the monitor cable is properly connected to the PC.
2. Check the VGA adapter card (if applicable) is inserted properly.
3. Listen for beep sounds. If you are using internal PC speaker make sure it is connected.
   a. continuous 3 short beeps : memory not detected
   b. 1 long beep and 8 short beeps : VGA not detected

c) The PC suddenly shuts down while booting up.

1. The CPU may experience overheating so it will shutdown to protect itself. Ensure the CPU fan is working properly.
2. From the BIOS setting, try to disable the Smartfan function to let the fan run at default speed. Doing a Load Optimised Default will also disable the Smartfan.

Start up problems after prolong use

After a prolong period of use your PC may experience start up problems again. This may be caused by breakdown of devices connected to the motherboard such as HDD, CPU fan, etc. The following tips may help to revive the PC or identify the cause of failure.

1. Clear the CMOS values using the CLR_CMOS jumper. Refer to CLR_CMOS jumper in Chapter 2 for Checking Jumper Settings in this user manual. When completed, follow up with a Load Optimised Default in the BIOS setup.

2. Check the CPU cooler fan for dust. Long term accumulation of dust will reduce its effectiveness to cool the processor. Clean the cooler or replace a new one if necessary.

3. Check that the 12V power & ATX connectors are fully inserted into the motherboard connectors. Make sure the latches of the cable and connector are locked into place.

4. Remove the hard drive, optical drive or DDR memory to determine which of these component may be at fault.

Maintenance and care tips

Your computer, like any electrical appliance, requires proper care and maintenance. Here are some basic PC care tips to help prolong the life of the motherboard and keep it running as best as it can.

1. Keep your computer in a well ventilated area. Leave some space between the PC and the wall for sufficient airflow.

2. Keep your computer in a cool dry place. Avoid dusty areas, direct sunlight and areas of high moisture content.

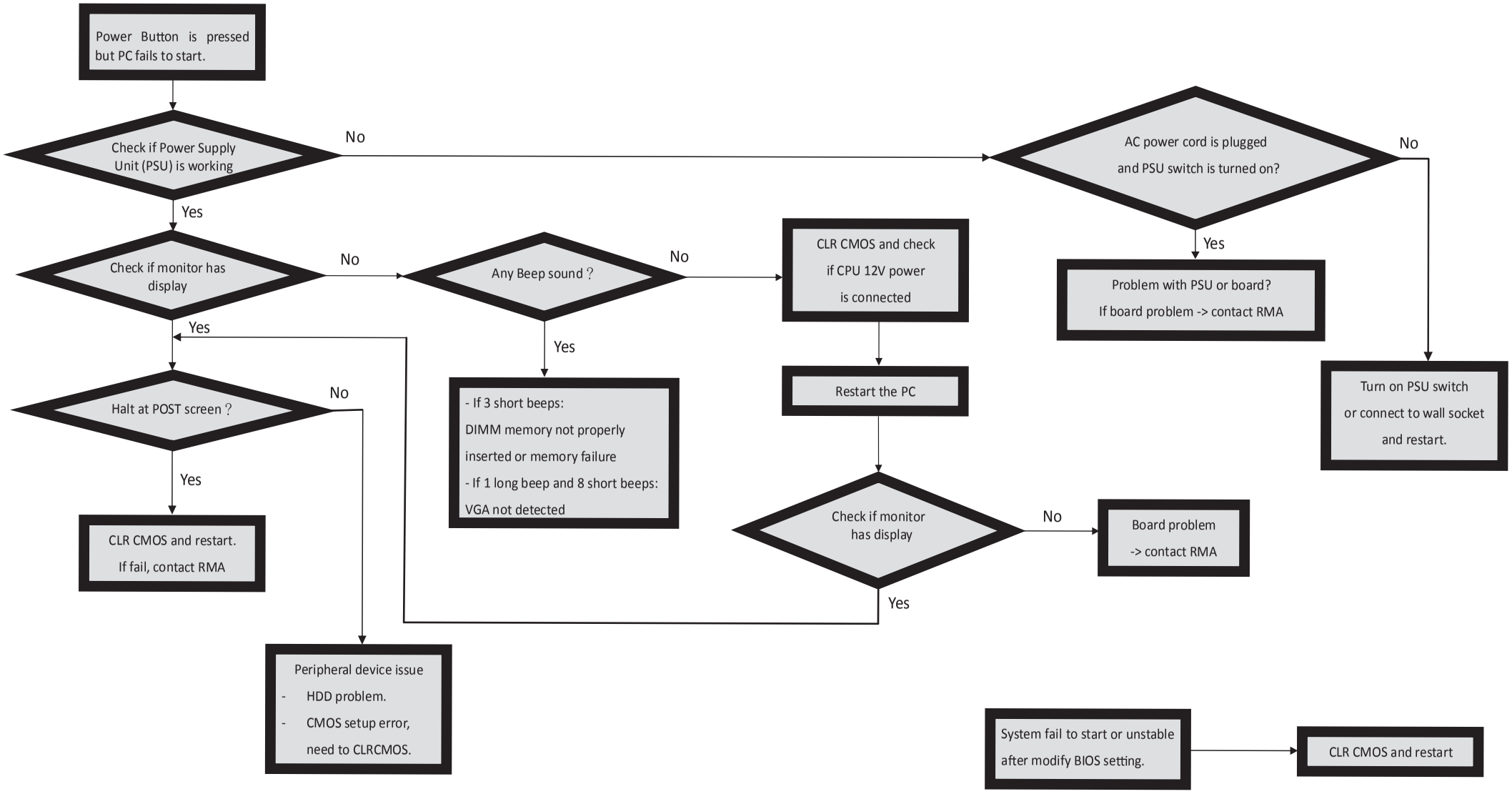
3. Routinely clean the CPU cooler fan to remove dust and hair.

4. In places of hot and humid weather you should turn on your computer once every other week to circulate the air and prevent damage from humidity.

5. Add more memory to your computer if possible. This not only speeds up the system but also reduces the loading of your hard drive to prolong its life span.

6. If possible, ensure the power cord has an earth ground pin directly from the wall outlet. This will reduce voltage fluctuation that may damage sensitive devices.

Basic Troubleshooting Flowchart


Power Button is pressed but PC fails to start.
Check if Power Supply Unit (PSU) is working
No
AC power cord is plugged and PSU switch is turned on?
No
Yes
Problem with PSU or board? If board problem -> contact RMA
Turn on PSU switch or connect to wall socket and restart.
Yes
Check if monitor has display
No
Any Beep sound ?
No
CLR CMOS and check if CPU 12V power is connected
Yes
- If 3 short beeps: DIMM memory not properly inserted or memory failure
- If 1 long beep and 8 short beeps: VGA not detected
Yes
Restart the PC
Halt at POST screen ?
No
Yes
CLR CMOS and restart. If fail, contact RMA
Check if monitor has display
No
Board problem -> contact RMA
Yes
Peripheral device issue
- HDD problem.
- CMOS setup error, need to CLRCMOS.
System fail to start or unstable after modify BIOS setting.
CLR CMOS and restart

Memo

POST Code Checkpoints

The POST code checkpoints are the largest set of checkpoints during the BIOS pre-boot process. The following table describes the type of checkpoints that may occur during the POST portion of the BIOS :

Checkpoint	Description
03	Disable NMI, Parity, video for EGA, and DMA controllers. Initialize BIOS, POST, Runtime data area. Also initialize BIOS modules on POST entry and GPNV area. Initialized CMOS as mentioned in the Kernel Variable "wCMOSFlags."
04	Check CMOS diagnostic byte to determine if battery power is OK and CMOS checksum is OK. Verify CMOS checksum manually by reading storage area. If the CMOS checksum is bad, update CMOS with power-on default values and clear passwords. Initialize status register A. Initializes data variables that are based on CMOS setup questions. Initializes both the 8259 compatible PICs in the system
05	Initializes the interrupt controlling hardware (generally PIC) and interrupt vector table.
06	Do R/W test to CH-2 count reg. Initialize CH-0 as system timer.Install the POSTINT1Ch handler. Enable IRQ-0 in PIC for system timer interrupt. Traps INT1Ch vector to "POSTINT1ChHandlerBlock."
08	Initializes the CPU. The BAT test is being done on KBC. Program the keyboard controller command byte is being done after Auto detection of KB/MS using AMI KB-5.
C0	Early CPU Init Start -- Disable Cache - Init Local APIC
C1	Set up boot strap processor Information
C2	Set up boot strap processor for POST
C5	Enumerate and set up application processors
C6	Re-enable cache for boot strap processor
C7	Early CPU Init Exit
0A	Initializes the 8042 compatible Key Board Controller.
0B	Detects the presence of PS/2 mouse.
0C	Detects the presence of Keyboard in KBC port.
0E	Testing and initialization of different Input Devices. Also, update the Kernel Variables. Traps the INT09h vector, so that the POST INT09h handler gets control for IRQ1. Uncompress all available language, BIOS logo, and Silent logo modules.
13	Early POST initialization of chipset registers.
24	Uncompress and initialize any platform specific BIOS modules.
30	Initialize System Management Interrupt.
2A	Initializes different devices through DIM. See *DIM Code Checkpoints* section of document for more information.
2C	Initializes different devices. Detects and initializes the video adapter installed in the system that have optional ROMs.
2E	Initializes all the output devices.
31	Allocate memory for ADM module and uncompress it. Give control to ADM

	module for initialization. Initialize language and font modules for ADM. Activate ADM module.
33	Initializes the silent boot module. Set the window for displaying text information.
37	Displaying sign-on message, CPU information, setup key message, and any OEM specific information.
38	Initializes different devices through DIM. See *DIM Code Checkpoints* section of document for more information.
39	Initializes DMAC-1 & DMAC-2.
3A	Initialize RTC date/time.
3B	Test for total memory installed in the system. Also, Check for DEL or ESC keys to limit memory test. Display total memory in the system.
3C	Mid POST initialization of chipset registers.
40	Detect different devices (Parallel ports, serial ports, and coprocessor in CPU, … etc.) successfully installed in the system and update the BDA, EBDA…etc.
50	Programming the memory hole or any kind of implementation that needs an adjustment in system RAM size if needed.
52	Updates CMOS memory size from memory found in memory test. Allocates memory for Extended BIOS Data Area from base memory.
60	Initializes NUM-LOCK status and programs the KBD typematic rate.
75	Initialize Int-13 and prepare for IPL detection.
78	Initializes IPL devices controlled by BIOS and option ROMs.
7A	Initializes remaining option ROMs.
7C	Generate and write contents of ESCD in NVRam.
84	Log errors encountered during POST.
85	Display errors to the user and gets the user response for error.
87	Execute BIOS setup if needed / requested.
8C	Late POST initialization of chipset registers.
8D	Build ACPI tables (if ACPI is supported)
8E	Program the peripheral parameters. Enable/Disable NMI as selected
90	Late POST initialization of system management interrupt.
A0	Check boot password if installed.
A1	Clean-up work needed before booting to OS.
A2	Takes care of runtime image preparation for different BIOS modules. Fill the free area in F000h segment with 0FFh. Initializes the Microsoft IRQ Routing Table. Prepares the runtime language module. Disables the system configuration display if needed.
A4	Initialize runtime language module.
A7	Displays the system configuration screen if enabled. Initialize the CPU's before boot, which includes the programming of the MTRR's.
A8	Prepare CPU for OS boot including final MTRR values.
A9	Wait for user input at config display if needed.
AA	Uninstall POST INT1Ch vector and INT09h vector. Deinitializes the ADM module.
AB	Prepare BBS for Int 19 boot.
AC	End of POST initialization of chipset registers.
B1	Save system context for ACPI.
00	Passes control to OS Loader (typically INT19h).
61-70	OEM POST Error. This range is reserved for chipset vendors & system manufacturers. The error associated with this value may be different from one platform to the next.